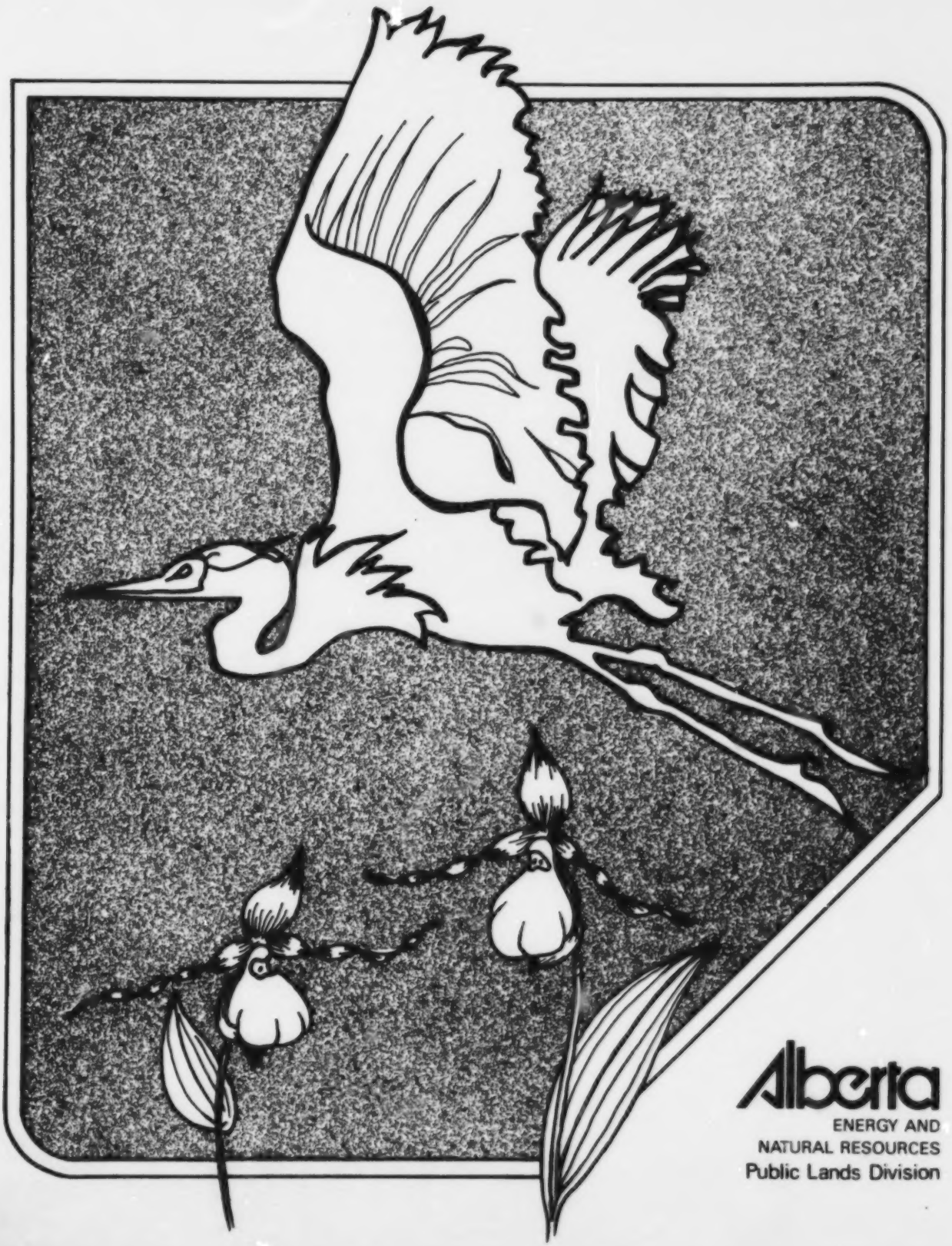
SASKATOON MOUNTAIN
Significant Features Assessment



Alberta
ENERGY AND
NATURAL RESOURCES
Public Lands Division

SASKATOON MOUNTAIN

SIGNIFICANT FEATURES ASSESSMENT

- 1982 -

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Natural Resources

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1.0 Introduction

The Saskatoon Mountain Natural Area has been previously identified as a potentially significant biological resource with relict Cordilleran species occurring here. Apart from brief visits by Canada Department of Agriculture, Alberta Parks and Natural Areas staff, there have been no biological investigations in the area.

The need for the 1982 studies arose because of increasing development pressures. In order to make sound management decisions regarding the area's future, work needed to be done on the location and description of special or sensitive features. The major objective of the study was to collect baseline data on the special features of the Saskatoon Mountain Natural Area and to make recommendations concerning their management. This entailed the following:

1. the provision of an annotated significant vascular flora and bird species list;
2. the provision of a labelled and unmounted collection of the significant vascular plants;
3. the identification of known and potential locations of significant vascular plants, bird habitats, and vegetation communities;
4. the provision of preliminary information on other special features of the site as acquired in the course of the study; and
5. an assessment of the potential effects of present and proposed disturbances (such as hunting, cattle grazing, and oil and gas surface access) in relation to the significant features identified in the course of the study.

In addition to these contractual objectives, we have provided a complete list of all vascular plants and vertebrates noted in the area during the course of this and previous studies.

2.0 Methods

In order to assess the extent of significant features on Saskatoon Mountain, most of the area was surveyed in the field. Initially, aerial photographs were studied and various 'habitat types' were delineated. Following this, June field work was undertaken, primarily to census breeding birds and to more thoroughly familiarize ourselves with the vegetation. A representative cross-section of the habitat types was sampled and plants collected.

The aerial photographs were studied once more and from the June data, the August study areas were selected. Sampling in August was undertaken throughout the area, but more effort was concentrated on plateau habitats, especially in the white spruce, paper birch, and alder-willow communities, where there is a greater diversity and abundance of relict Cordilleran species.

Notes were made on all vertebrates observed. Birds were censused in June primarily by noting singing or calling birds. For the vegetation, field notes were taken and plots were sampled. Data was entered on the Natural Areas - Plant Classification data sheets. Detailed canopy coverages for representative vegetation types were assessed in a visually defined thirty metre diameter circular plot. Photographs of representative plots and other features were taken and observation sites and plot numbers were noted on aerial photographs (1:15,000 scale 1979).

Collections from Saskatoon Mountain by L. Jenkins of the Canada Department of Agriculture Research Station at Beaverlodge were studied and this data has been incorporated into the annotated list.

Plant taxonomy largely follows Scoggan (1979), although other references were used where the taxonomy was less clear. Final identification of some difficult groups was made by comparisons with specimens at the University of Calgary Herbarium.

3.0 Study Area Description

Saskatoon Mountain Natural Area is located within Natural Region 2C, the Peace River Parkland. It represents a minor local high in the physiography which is gently rolling and sloping south from the Saddle Hills.

Except for those leased out to the Government of Canada, Department of National Defence, the area encompassed by this study included all those lands in NE9, N & SE 10, 11, S14, W & SE 15, and SE16 in Township 72, Range 9 west of the Sixth Meridian. With the exception of SE15, these lands at one time constituted Saskatoon Mountain Provincial Park. The SE of 15 and SE of 10 are cited in the Terms of Reference as part of the Natural Area but these lands are not noted in the Ecological Reserves and Natural Areas Map Supplement listing on the Saskatoon Mountain area.

The maximum elevation of Saskatoon Mountain (Saskatoon Hill) is approximately 940 metres, a rise of about 150 metres above the surrounding country. The slopes to the summit rise most steeply on the west and south faces, while the north and east slopes dip more gently. The hill has a prominent south-west facing scarp extending four kilometres which affords excellent views of the Rocky Mountains about 120 kilometers to the south-west. The top of the hill is plateau-like.

Most of the major creeks and drainages are located on the north slope. There are no large streams in the area. A spring-like outflow was noted beneath the radar installation

on the west slope on Department of National Defence land. Combined with a slightly cooler and wetter climate than the surrounding country and the presence of ground water discharge, the relatively level plateau has been instrumental in maintaining the distinctive vegetation of the area. Most of the best examples of representative Cordilleran vegetation are found on this plateau, an area which lies mostly above 910 metres on the south and west slopes and above 880 metres on the north and east slopes.

3.1 Climate

The following summaries and averages are for 66 years of continuous recording at Beaverlodge, Alberta. They are taken from an unpublished report by P. Mills of the Agriculture Canada Research Station, Beaverlodge. The conditions at nearby Saskatoon Mountain are known to be slightly moister and cooler.

Average Air Temperature (°C) with averages for 1916-1981:

	Mean	Mean Maximum	Mean Minimum
Jan.	-14.1	-9.4	-18.8
Feb.	-10.5	-5.5	-15.4
Mar.	-5.6	-0.5	-10.7
Apr.	2.8	8.2	-2.7
May	9.6	16.0	3.0
June	13.1	19.5	6.7
July	15.4	22.4	8.8
Aug.	14.2	21.0	7.6
Sept.	9.7	15.9	3.6
Oct.	4.2	9.5	-0.9
Nov.	-4.7	-0.7	-8.9
Dec.	-11.4	-7.0	-15.7
Avg.	1.9	7.5	-3.6

Frost Free Days - calendar dates on which main frost free periods began and ended:

	66 Year Average	Earliest Day/Year	Latest Day/Year
Last Spring Frost (0°C)	May 25	May 3/56	June 18/32
First Fall Frost (0°C)	Sept. 5	July 23/18	Oct. 5/40
Last Killing Frost (-2.2°C)	May 10	Apr. 14/57	June 8/35
First Killing Frost (-2.2°C)	Sept. 21	Aug. 10/16	Oct. 21/75

Frost Free Periods - number of frost free days per calendar year:

	66 Year Average	Longest Period and Year	Shortest Period and Year
(0°C)	102.6	140 days, 1944	48 days, 1918
(-2.2°C)	134.0	172 days, 1940	70 days, 1916

Bright Sunshine - hours of bright sunshine per calendar year with 59 year extremes:

	59 Year Average	Most Sunlight Hours	Year	Least Sunlight Hours	Year
Annual	2125.7	2401.2	1928	1916.4	1951

Precipitation - in mm (rain and snow combined) with extremes for the 66 year average period:

	66 Year Average	Greatest Amount mm	Year	Least Amount mm	Year
Jan.	32.9	97.8	1920	1.3	1942
Feb.	25.5	69.6	1979	0.0	1931
Mar.	26.1	53.8	1920	3.6	1981
Apr.	20.4	77.5	1928	0.8	1921
May	39.6	168.1	1917	0.8	1971
June	58.4	168.1	1964	9.7	1922
July	61.4	209.0	1951	8.9	1967
Aug.	54.5	157.0	1976	4.3	1955
Sept.	42.8	125.0	1969	5.3	1917
Oct.	28.0	119.6	1957	4.6	1978
Nov.	29.8	87.1	1933	0.0	1980
Dec.	31.3	90.7	1980	1.8	1959
Annual	453.0	730.5	1964	247.9	1923

Precipitation - snowfall per seasonal year (July-June) with extremes and 66 year average:

	66 Year Average	Greatest Amount	Year	Least Amount	Year
Seasonal Total	190.2	379.6	1919	63.3	1943

3.2 Geology and Soils

The bedrock is of the late Cretaceous Wapiti Formation—grey, feldspathic, clayey sandstone; grey bentonitic mudstone; bentonite; scattered coal; and non-marine. The elevation of the top of the original Wapiti Formation was approximately two thousand feet above the summit of Saskatoon Mountain and therefore the beds capping the area are probably Middle Wapiti in age. Small outcrops of bedrock are present on the west slope.

Surficial deposits consist of till thinly covering most of the bedrock of the Study Area (Jones 1966).

Groundwater is abundant in the region. In the Study Area, surface flows are augmented by minor amounts of groundwater discharge (Hackbarth 1976).

The soils of Saskatoon Mountain are substantially different from the surrounding country where solodic soils on glacio-lacustrine materials are prevalent. Modal soils on the hill system are loam and clay loam, and slightly calcareous. Orthic Luvisols developed on glacial till. Sandy loam and loam Brunisolic soils developed from sandstone have been reported on the steep slopes (Odynsky et al 1961). While not described, it is probable that Gleyed Grey Luvisols and Gleysols predominate in the alder-willow communities and sedge wetlands where there is a high water table and reducing conditions for several months of the year.

3.3 Vegetation

The major vegetation types on Saskatoon Mountain are:

1. aspen woodland;
2. balsam poplar woodland;
3. white spruce woodland;
4. paper birch woodland; and
5. alder-willow shrubland.

3.3.1 Aspen Woodland

Aspen woodland occurs commonly along the west and south facing slopes. It usually has a dense canopy with a lush herb and shrub understory. Major understory species on the slopes include: Epilobium angustifolium, Viburnum edule, Smilacina racemosa var. amplexicaulis, and Aster conspicuus. Near the bottom of the slopes, outside the study area, the understory is noticeably drier with Shepherdia canadensis dominant. Only two Cordilleran species occur in any abundance in the slope aspen woods:

Thalictrum occidentale
Smilacina racemosa var. amplexicaulis.

On the west slope there are isolated stands of Corallorhiza maculata.

On the plateau, the aspen woods are less extensive and occur primarily as isolated groves. Dominant species include Symphoricarpos albus, Thalictrum occidentale, and Epilobium angustifolium. Other leading species are Spiraea betulifolia, Rosa woodsii, Aster conspicuus, Smilacina

racemosa, Aralia nudicaulis, Osmorhiza chilensis, and Lathyrus ochroleucus. Plateau aspen woods have more Cordilleran species than slope aspen woods. These include:

Spiraea betulifolia (prime habitat)
Smilacina racemosa var. amplexicaulis (prime habitat)
Thalictrum occidentale
Osmorhiza chilensis
Streptopus amplexifolius var. americanus
(infrequent in mature plateau aspen only)

Rubus parviflorus grows only in isolated pockets in both slope and plateau aspen. Arnica cordifolia is very local but sometimes common in plateau aspen sites where it does occur.

3.3.2 Balsam Poplar Woodland

The balsam poplar woodland occurs most extensively on imperfectly drained soils along the slopes, especially along drainages. On the plateau it occurs as isolated groves interspersed with alder-willow and spruce vegetation. It is characterized by a moderately open to dense canopy with a lush herb and shrub understory. The dominant species in the understory are Viburnum edule and Aster conspicuus. Cornus stolonifera and Epilobium angustifolium are locally dominant. Other leading species are Rosa woodsii, Symphoricarpos albus, Aralia nudicaulis, Rubus parviflorus (especially on the plateau), and Calamagrostis canadensis.

This vegetation type is relatively devoid of Cordilleran species. Only four occur with regularity:

Smilacina racemosa var. amplexicaulis
Osmorhiza chilensis
Rubus parviflorus
Thalictrum occidentale

Corallorhiza striata has been noted on two sites in balsam poplar, once on the plateau and once on the west slope, in both cases immediately adjacent alder-willow habitats.

3.3.3 White Spruce Woodland

White spruce woods appear to be remnants of pre-settlement days prior to repeated and major fires which burned over the area during the early part of this century. A few stands of mature spruce remain on the plateau but only isolated trees or groves occur in a very few sites along drainages on the slopes.

These spruce woodlands typically have a moderately open canopy with trees over twenty metres in height and with a diameter at breast height averaging forty centimetres and ranging up to seventy centimetres. The dominant understory species is Viburnum edule. Other major species are: Lonicera involucrata, Gymnocarpium dryopteris, Epilobium angustifolium, Aralia nudicaulis, Linnaea borealis, Mertensia paniculata, Petasites palmatus, Mitella nuda, Equisetum sylvaticum, Cornus canadensis, Rubus pubescens, Osmorhiza chilensis, Cornus stolonifera, and Hylocomium splendens. Locally abundant species include: Rubus parviflorus, Athyrium filix-femina, Alnus crispa, Rosa woodsii, Calamagrostis canadensis, Cinna latifolia, Sorbus scopulina, and Equisetum arvense. Spruce stands are rich in forb species.

Several Cordilleran species occur here including:

Sorbus scopulina
Alnus crispa ssp. sinuata
Osmorhiza chilensis
Smilacina racemosa var. amplexicaulis
Rubus parviflorus
Thalictrum occidentale
Athyrium filix-femina var. sitchense
Circaea alpina var. pacifica (prime habitat)
Streptopus amplexifolius var. americanus
Pinus contorta var. latifolia (rare)
Clematis verticellaris (rare)

Two species which occur locally in Alberta are locally abundant in the Saskatoon Mountain spruce woods - Adoxa moschatellina and Cinna latifolia.

3.3.4 Paper Birch Woodland

Paper birch stands occur within a very restricted area on more poorly drained soils on the central part of the plateau in Section 11. They are often intermingled with alder-willow habitats and the understory reflects this. They are characterized by an open canopy and an understory mosaic of shrubs herbs, and grasses.

Dominant understory species are Viburnum edule, Alnus crispa (primarily, although A. tenuifolia does occur commonly), Salix discolor, Calamagrostis canadensis, and Epilobium angustifolium. Locally common species are Sorbus scopulina, Gymnocarpium dryopteris, Equisetum sylvaticum, Linnaea borealis, Cinna latifolia, Thalictrum occidentale, Actaea rubra, and Aralia nudicaulis. Most birch stands are rich in forb species although their individual cover values are quite low.

Many Cordilleran species occur here:

Alnus crispa ssp. sinuata
Sorbus scopulina
Circaea alpina var. pacifica
Streptopus amplexifolius var. americanus
Thalictrum occidentale
Osmorhiza chilensis
Athyrium filix-femina var. sitchense
Smilacina racemosa var. amplexicaulis (rare)
Arnica cordifolia (rare)
Phleum alpinum (rare)
Rubus parviflorus (rare)
Angelica genuflexa (rare)
Pinus contorta (rare)

Species that are uncommon or local in Alberta which occur in paper birch woods on Saskatoon Mountain include Impatiens capensis and Cinna latifolia.

3.3.5 Alder-willow Shrubland

Alder-willow shrublands occur primarily on the plateau but also along drainages on the north slope and, infrequently, along drainages on the west slope. However, the best development of Cordilleran species and the most extensive alder-willow stands occur on the central part of the plateau in Section 11 on soils where there is saturated soil for a good part of the year. They can range from very dense shrub tangles of four to five metre alder and willow to moderately open areas with lush herb growth.

The dominant species are Alnus tenuifolia (Alnus crispa is locally common) and Salix discolor. Other major

species include: Sorbus scopulina, Viburnum edule, Epilobium angustifolium, Thalictrum occidentale, Gymnocarpium dryopteris, Aralia nudicaulis, and Urtica dioica var. lyallii. Locally important species are: Athyrium filix-femina, Rubus parviflorus, Streptopus amplexifolius, Cinna latifolia, Calamagrostis canadensis, Ribes hudsonianum, Salix maccalliana, Rubus idaeus, Angelica genuflexa, Aster conspicuus, Actaea rubra, and Delphinium glaucum.

Numerous Cordilleran plants occur in the alder-willow communities:

Rubus parviflorus
Streptopus amplexifolius var. americanus (prime habitat)
Sorbus scopulina (prime habitat)
Smilacina racemosa var. amplexicaulis
Urtica dioica var. lyallii (prime habitat)
Circaea alpina var. pacifica
Thalictrum occidentale
Cinna latifolia (prime habitat)
Alnus crispa ssp. sinuata
Athyrium filix-femina var. sitchense
Angelica genuflexa (prime habitat)
Pinus contorta var. latifolia (rare)
Phleum alpinum (rare)
Spiraea betulifolia (rare)
Carex macloviana var. microptera (rare)
Carex mertensii (rare)

Impatiens capensis, a local species in Alberta, also occurs here.

3.3.6 Minor Vegetation Types

Local vegetation types include isolated plant communities along creeks and in depressions or drainages.

Woodland ponds and wetlands on the west slope are characterized by a mixture of Alnus tenuifolia, Salix maccalliana, and Calamagrostis canadensis - dominated vegetation. Other

locally important species are Ribes hudsonianum, Salix discolor, Urtica dioica var. lyallii, Angelica genuflexa, Rubus acaulis, Circaea alpina, Epilobium glandulosum, Stellaria calycantha, Equisetum arvense, Glyceria striata, Glyceria pulchella, Carex disperma, Poa palustris, and Athyrium filix-femina.

Several rare (regionally or provincially) or Cordilleran species occur here:

Athyrium filix-femina var. sitchense
Circaea alpina var. pacifica
Angelica genuflexa (densest stands in the study area)
Aster puniceus (local in region)
Sorbus scopulina
Urtica dioica var. lyallii
Smilacina trifolia (local in region)
Rumex maritimus (local in region)
Alopecurus aequalis (local in region)
Veronica scutellata (local in region)
Parnassia palustris var. montanensis
Habenaria hyperborea (local in region)
Habenaria obtusata (local in region)
Orchis rotundifolia (local in region)

Sedge wetlands occur in a few depressions on the plateau. They are generally dominated by Carex aquatilis with lesser amounts of Calamagrostis canadensis and Carex rostrata, however, one site is dominated by Calamagrostis canadensis to the exclusion of Carex aquatilis. Salix pedicellaris, Potentilla palustris, and Petasites sagittatus are each important in two sites, while Equisetum fluviatile is a major species in only one wetland where there is deeper water. These sedge wetlands have no Cordilleran species but provide habitat for species which are rare in the region such as Veronica scutellata, Cardamine pensylvanica, and

Eriophorum russeolum var. albidum.

Two significant species, Matteuccia struthiopteris and Viola selkirkii, have been noted only along creeks on the plateau. Because cattle grazing has been most severe in these areas, other significant species or these two noted above may be more common than it appears.

3.4 Wildlife

3.4.1 Deciduous Woodlands and Shrubbery

Included in this category are aspen, balsam poplar, paper birch, and mixed deciduous-coniferous woodlands, as well as alder and willow habitats. Twenty-eight species of breeding birds inhabit the deciduous woodlands and shrubbery.

Thirteen occur mainly in the overstory of the woodlands or near the ground and avoid denser shrubbery. These include: Red-tailed Hawk, Ruffed Grouse, Hairy Woodpecker, Least Flycatcher, Red-eyed Vireo, Ovenbird, Northern Oriole, Yellow-bellied Sapsucker, American Robin, Tennessee Warbler, Rose-breasted Grosbeak, Chipping Sparrow, and Purple Finch. The last six species are occasional in mixed deciduous-coniferous situations. Yellow-bellied Sapsucker also regularly forages in paper birch.

Fifteen species of birds inhabit the understory shrubbery of deciduous woods, and to a lesser extent the taller trees, as well as thickets of shrubbery. These are: Black-capped Chickadee, Swainson's Thrush, Warbling Vireo, Philadelphia Vireo, Black-and-White Warbler, Canada Warbler, Fox Sparrow, White-throated Sparrow, House Wren, Mourning Warbler, Orange-crowned Warbler, Yellow Warbler, American Redstart, Alder Flycatcher, and Cedar Waxwing. The last five species are most indicative of alder thickets. The

Philadelphia Vireo and Fox Sparrow inhabit the edges of birch-alder thickets as well.

Two species which are more typical of spruce woods, the Western Wood-Pewee and Dark-eyed Junco, are infrequent in deciduous woods.

3.4.2 Coniferous Woodland

Ten bird species are most characteristic of spruce woodland or spruce-dominated mixed woods: Western Wood-Pewee, Boreal Chickadee, Red-breasted Nuthatch, Golden-crowned Kinglet, Ruby-crowned Kinglet, Solitary Vireo, Yellow-rumped Warbler, Western Tanager, Dark-eyed Junco, and White-winged Crossbill.

Two species which are more typical of decidous woodlands, the American Robin and Swainson's Thrush, are occasionally found in spruce woods.

One mammal, the Red Squirrel, is restricted to stands of spruce, but Mule Deer, Moose and Snowshoe Hare also occur.

Four species of birds are difficult to assign to particular habitats. In other areas of the province the Olive-sided Flycatcher and Gray Jay are characteristic of coniferous woods, the former species near wetlands. The Northern Goshawk occurs in coniferous and deciduous mature woodland of the province; in the study area it nests in deciduous woods at the edge of mature spruce and forages in spruce woods as well. The Brown-headed Cowbird is found in

coniferous and deciduous woods.

Of the five most regularly recorded mammals, four range through a variety of habitats. The Snowshoe Hare, Mule Deer, and Moose frequent coniferous and deciduous woods as well as thick shrubbery; only the last two were recorded in alder thickets. The Coyote is a notorious generalist and may be expected to forage throughout the study area.

3.3.3 Wetlands

Ponds and sedge meadows are frequented by a relatively low number of animals. Chorus Frogs, Wood Frogs, and Western Toads breed in these wetlands in the spring before moving into wooded habitats. The Lincoln's Sparrow occurs rarely in wet meadows as well as at the edge of wet areas. Moose also use the wetlands.

4.0 Significant Species and Habitats

4.1 Significant Vascular Flora

Criteria used for determining significance were: published rarity (Argus & White 1978, Packer & Bradley 1978, Boivin 1972); disjunct or relict Cordilleran species; or, in a few cases, knowledge by the authors that, while not rare, certain species are local in Alberta.

The following is a listing of all vascular flora found at Saskatoon Mountain and considered significant:

Athyrium filix-femina var. sitchense Cordilleran
Matteuccia struthiopteris Local in this part of Alberta
Pinus contorta var. latifolia Cordilleran
Cinna latifolia Local in Alberta
Phleum alpinum Cordilleran
Carex macloviana var. microptera Cordilleran
Carex mertensii Cordilleran. Very rare in Alberta, only two collections. Significant range extension.
Eriophorum russeolum var. albidum Uncommon in Alberta
Smilacina racemosa var. amplexicaulis Cordilleran
Streptopus amplexifolius var. americanus Cordilleran
Corallorhiza striata Uncommon in Alberta
Corallorhiza maculata Uncommon in Alberta
Alnus crispa ssp. sinuata Cordilleran
Urtica dioica var. lyallii Cordilleran
Clematis verticellaris var. columbiana Cordilleran
Thalictrum occidentale Cordilleran
Parnassia palustris var. montanensis Cordilleran
Rubus parviflorus Cordilleran. Local in this part of Alberta
Sorbus scopulina Cordilleran. Local in Alberta
Spiraea betulifolia Cordilleran
Impatiens capensis Uncommon in Alberta
Viola selkirkii Rare in Alberta
Circaea alpina var. pacifica Cordilleran
Angelica genuflexa Cordilleran. Uncommon in Alberta
Osmorhiza chilensis Cordilleran. Local in Alberta

Adoxa moschatellina Local in Alberta
Arnica cordifolia Cordilleran
Cirsium foliosum Cordilleran. Local in Alberta
Senecio eremophilus Local in Alberta

Two other species, Castilleja miniata and Aster conspicuus, are more western in distribution, however, it is unclear from the literature if they could be called Cordilleran species.

4.2 Significant Wildlife

Unlike the vegetation, no Cordilleran element is considered to exist in the wildlife component, nor are any provincially rare species present. However, four bird species are noteworthy, the Philadelphia Vireo, Canada Warbler, Fox Sparrow and Northern Goshawk. The occurrence of the Philadelphia Vireo and Canada Warbler represents extensions to their Alberta range as reported in Salt and Salt 1976. The closest that either species had previously been found nesting was 120 km to the east at Sturgeon Lake and 170 km to the north near Peace River. Of additional significance is that the Canada Warbler is locally distributed throughout its Alberta range. The Northern Goshawk is also rather local, being confined to mature woodlands for nesting purposes. Fox Sparrows are nowhere common in Alberta and are even rarer in the immediate region surrounding Saskatoon Mountain (Salt & Salt 1976).

4.3 Significant Habitats

The following is a listing of the areas identified as special on the aerial photographs accompanying this report. This should not be construed as providing locations for all significant species. Significant species are found in most parts of the plateau and over much of the slopes. The following areas are the best representatives of the unique habitats of Saskatoon Mountain or contain some of the rarest species (provincial or local). Significant species known to occur are listed.

S1 - alder-willow-mountain ash
- abundant Sorbus scopulina
- Cinna latifolia, Athyrium filix-femina

S2 - alder-willow-mountain ash
- abundant Sorbus scopulina
- Carex mertensii (at edge along cutline)
- Thalictrum occidentale, Athyrium filix-femina, Urtica dioica var. lyallii

S3 - alder-willow-mountain ash
- most extensive alder-willow-mountain ash habitat in the study area
- good patches of Sorbus scopulina
- Alnus crispa, Pinus contorta (lone tree), Athyrium filix-femina
- part of area has drier meadow vegetation with Castilleja miniata (rare locally), Habenaria viridis (rare locally), Phleum alpinum, Spiraea betulifolia, Luzula parviflora (rare locally)
- Fox Sparrow habitat

S4 and S5 - paper birch woodland

- most extensive open paper birch woodland in study area
- Sorbus scopulina, Alnus crispa, Angelica genuflexa, Rubus parviflorus, Arnica cordifolia (rare), Streptopus amplexifolius var. americanus, Thalictrum occidentale, Osmorhiza chilensis, Athyrium filix-femina, Cinna latifolia, Pinus contorta (lone tree), Impatiens capensis
- high diversity of breeding bird species (fifteen), especially along edges with aspen and alder-willow S3
- Philadelphia Vireo occurs most commonly here

S6 and S7 - aspen-meadowsweet habitat

- most extensive Spiraea betulifolia understory in study area
- Thalictrum occidentale, Smilacina racemosa, Osmorhiza chilensis
- good stands of Rubus parviflorus at edges

S8 - white spruce woodland

- oldest, largest, and most extensive Picea glauca woods in the study area
- Alnus crispa, Sorbus scopulina, Osmorhiza chilensis, Clematis verticellaris var. columbiana, Smilacina racemosa, Cinna latifolia, Athyrium filix-femina, Thalictrum occidentale, Streptopus amplexifolius, Circaea alpina,
- dense stands of Rubus parviflorus
- included are shrub communities with Angelica genuflexa, Impatiens capensis and large (ten metre, twenty centimetre dbh) Alnus tenuifolia and Salix discolor
- ten breeding bird species; the highest diversity of all the spruce stands

S9, S10, and S11 - sedge wetlands
-local habitats in the region
- no rare species provincially but some are locally rare such as Cardamine pensylvanica, Veronica scutellata, and Eriophorum russeolum var. albidum

S12 - alder-willow
- Cinna latifolia, Streptopus amplexifolius
- at edge along cutline are Carex deweyana and Carex macloviana var. microptera

S13 - aspen-meadowsweet
- extensive Spiraea betulifolia
- large aspen in part of area

S14 - creekside vegetation
- Senecio eremophilus, Matteuccia struthiopteris
- Carex tenera (a locally rare species)

S15 - cleared meadow
- Cirsium foliosum

S16 - white spruce woodland
- Sorbus scopulina, Rubus parviflorus, Streptopus amplexifolius, Smilacina racemosa, Urtica dioica, Thalictrum occidentale, Circaea alpina, Cinna latifolia, Pinus contorta (lone tree)
- Viola selkirkii (rare, along creek)
- Goshawk nesting area

S17 - aspen and balsam poplar woodland
- dense Rubus parviflorus and Smilacina racemosa
- Thalictrum occidentale, Osmorhiza chilensis
- scattered clumps of Corallorhiza maculata

S18 - woodland ponds and wetlands
- rare habitats in region
- Sorbus scopulina, Circaea alpina, Athyrium filix-femina, Urtica dioica
- densest stands of Angelica genuflexa in area
- locally rare species such as Smilacina trifolia, Rumex maritimus, Alopecurus aequalis, and Veronica scutellata

S19 - woodland ponds and wetlands
- rare habitats in region
- Parnassia palustris var. montanensis, Athyrium filix-femina, Angelica genuflexa
- Corallorhiza striata in adjacent woodland
- locally rare species such as Habenaria hyperborea, Aster puniceus, Habenaria obtusata, Smilacina trifolia, and Orchis rotundifolia

S20 - white spruce woodland
-extensive but not as dense and not as continuous as S8
- Sorbus scopulina, Alnus crispa, Osmorhiza chilensis, Rubus parviflorus, Streptopus amplexifolius, Smilacina racemosa, Thalictrum occidentale, Impatiens capensis, Angelica genuflexa
- some locally rare species such as Corallorhiza trifida

S21 - young aspen woodland
- best stands of Arnica cordifolia in study area

S22 - mixed spruce-aspen woodland
- Adoxa moschatellina

S23 - alder-willow
- Corallorhiza striata (in adjacent woodland)
- Fox Sparrow habitat

S24 - balsam poplar woodland
- Canada Warbler habitat

S25 - balsam poplar woodland
- Canada Warbler habitat

5.0 Land Use

The following is a historical summary of major events which have affected Saskatoon Mountain:

1929 - Local citizens petitioned Alberta Government to establish a park.

1936 - 1760 acres set aside for park (O/C 353/36), Nov. 17. Some work was done in building a shelter on the top of the hill and plans were made to cut a trail from east to west.

1937 - Some clearing of the trail was accomplished.

1940 - 320 acres added.

1950 - 218.33 acres taken over by Department of National Defence for radar station and local advisory committee was disbanded.

1955 - O/C of 1936 discovered invalid and rescinded.

1967 - Transfer of 218.33 acres to D.N.D. made official.

1969 - Proposed ski hill cleared on west slope.

1977 - Local citizens concerned as county map showed only 9 quarters (out of an original 13) as park. Concern was expressed to the M.L.A. and a petition was circulated to stop shooting wildlife in the area.

1979 - Local citizens made formal submission to Northern Alberta Development Council expressing concern over the future of the park.

- 1020 acres reserved for natural area
- Inspection report prepared by P. McIsaac for Natural Areas recommending further investigation and cancellation of grazing leases.

1981 - Union Oil proposes to clear a well site to drill for oil.
- M.L.A. for the area requested no further permits be issued.

1982 - Natural Areas commissions significant features assessment.

A Mr. Carty who lives west of Saskatoon Mountain mentioned that spruce woods were more extensive prior to extensive cutting and fires which were set in the area. At one time military use had a significant negative impact on wildlife through the illegal shooting of animals.

Today, disturbance on the Department of National Defence land constitutes the most significant area of disruption on Saskatoon Mountain with regard to the special features. In addition to the buildings, residences, and radar equipment, there are cleared areas for storage, a sewage lagoon, dugouts, and gravel piles. These are all located within the level plateau area.

A road runs north-south between sections 10 and 11 and 14 and 15 and there are numerous powerline easements (especially in the west end) and a few cutlines cross the area. Most cutlines are used to designate lease areas - both grazing and D.N.D. lands.

Two grazing leases exist here: #37462 in Sections S14 and SE15 and #37409 in Section 11. The grazing is light to moderate on #37409 and moderate to severe on #37462. There are few

introduced weed patches on #37409 but extensive areas on #37462. These weeds are largely Trifolium sp. and Taraxacum sp. Heavy grazing on #37462 has severely curtailed the development or maintenance of creekside vegetation and has eliminated much of the lush understory in alder-willow areas.

The proposed ski hill is used at present by tobogganers in winter and by trail bikers in summer. There are numerous miscellaneous leases for transmission towers near the summit of the hill along the main north-south road. Land use by recreationists has been and continues to be significant. The hill is regularly used for picknicking, berry-picking, mushroom hunting, cross-country skiing, tobogganing, ski-dooing, and as a viewpoint. Hunting activity has also increased in recent years, much to the consternation of some local residents. (McIsaac 1979)

6.0 Discussion

The area is not representative of the common foothills or mountain vegetation types. It does however contain representative examples of vegetation which is highly localized in the Foothills-Rocky Mountain Natural Region and in other isolated hill systems in northern Alberta. This vegetation appears to be most closely related to the characteristics of water at the surface. These areas are imperfectly to poorly drained, but the water is constantly flowing through the plant communities, at or near the surface. Water is usually slightly calcareous and, combined with a cooler wetter climate and the right kind of topography, these distinctive vegetation communities thrive. Similar vegetation has been observed by the authors elsewhere in the foothills (Coal Valley) and the Swan Hills; however, the extent, size and abundance of mountain ash at Saskatoon Mountain is the best noted to date.

It is unclear whether cattle grazing has eliminated some of the rarer plants which grow in restricted habitats, for example along creeks, where grazing has been most severe. The two rarest species, Viola selkirkii and Carex mertensii, both grow in this habitat. Cattle grazing, even if light in some situations, could be masking the significance of the area.

With the exception of the Columbian Ground Squirrel which is probably introduced, there are no rare or Cordilleran wildlife species, but the area does have several interesting birds which are local or represent extensions to their known ranges, and there are habitats which are moderately productive on a provincial scale for breeding birds.

From the preceding vegetation descriptions, it is apparent that the plateau white spruce, paper birch, and alder-willow habitats are the most significant for Cordilleran plant species. The numbers and abundance of significant species decrease markedly downslope. The most extensive and representative of these vegetation types occur, along with other special features, in Section 11-72-9-W6. This area also has been, in general, minimally affected by grazing.

Cattle grazing, with the exception of clearing programs, has had minimal impact on the native vegetation except in Lease 37462 on Sections S14 and SE15. Here, grazing by cattle has severely reduced the cover of native plants, particularly in alder-willow habitats. This has resulted in the establishment of a few exotic species such as clover and dandelions, and damaged creekside vegetation most significantly. Cattle grazing is incompatible with the maintenance of the significant vegetation on Saskatoon Mountain. Natural habitats in this area were never subjected to the type of grazing needed to maintain a viable economic operation.

Because the significant vegetation appears to be dependent on the high water table and the existing drainage patterns, road and wellsite construction could have significant and lasting negative effects through disturbance of natural drainage patterns.

The area of highly significant vegetation is very restricted, occupying probably no more than 600 acres; therefore, any removal of or disturbance to these habitats represents a major impact. Already there have been intrusions into the most representative

vegetation. Fortunately, the greatest disturbance has been in the less significant vegetation. However, even these habitats contain special features.

Some of these habitats have good recreational potential, for example the west slopes offer opportunities for hiking. The highly significant areas probably offer less recreation potential, except for the ardent naturalist, because of the denser vegetation, wetness and biting insects. Due to good growing conditions, the vegetation of the Study Area appears to be quite hardy and resilient, with respect to recreational use. Even the white spruce stands have a moderately dense and lush understory, in most cases.

As land continues to be cleared in the region, the value of places like Saskatoon Mountain can only increase. Already there is dispersed recreational use in the area. Most of these activities are quite compatible with the protection of the natural history. Mechanized recreation such as trail-biking is having local impact, mostly to areas disturbed in the past. In a few areas these activities are preventing the re-establishment of vegetation. This is leading to some erosion along the proposed ski hill site.

At present, the area is shown on the Oil and Gas Restricted Areas Map to indicate no surface access will be allowed.

The Natural Areas Reservation of 1979 (HLR5 & HLR4) appears to apply only to the N10, S14, SE15 and E11. This leaves NE9, SE10, W11, W15 and SE16 without a formal Natural Area reservation, although there is an NLR4 on these lands.

Local residents have become increasingly concerned about the increase in development in the area. This includes the removal of trees, sites being cleared, and the construction of radio communication towers. The natural area is not well defined, and hunters continue to poach, during and after the hunting season (C. Elliott, pers. comm.). It is unclear whether the area is a legislated wildlife reserve, so hunting may not be illegal. Some of the lease holders are not very receptive to visitors on their leases.

Support for the natural area has come from C. Elliott of the Beaverlodge Research Station; the Northern Development Branch of Alberta Tourism and Small Business; Alberta Parks; Major Sawchuck, the former commanding officer at the D.N.D. base; and the City of Grand Prairie Agricultural Development Committee. There has also been some interest shown by the local media in the future of the area (McIsaac 1979).

7.0 Recommendations

1. Park boundaries should be delineated and posted to cover all of the original park area and also the SE corner of 15. Posting should clearly establish that the area is off limits to motorized vehicles.

2. If no other candidates are nominated, then Section 11 should be considered as a Special Ecological Reserve to preserve a relict outlier of wet-site Cordilleran vegetation. While there are significant resources on the remaining lands, they seem best suited for both Educational and Recreational Natural Areas purposes. If other sites have been selected which represent this vegetation, then Section 11 should be considered for Educational Natural Areas purposes because of the area's resilience to disturbance.

3. Grazing leases are to be terminated except in cleared areas in Section 11 which should be fenced. Cleared areas in the other sections should be allowed to revegetate naturally. It would also be preferable in Section 11 to allow revegetation of natural species on the grazing lease, or to use native seed or closely related domestic varieties for seeding. Less preferable would be to reseed with exotics like clovers, timothy and other aggressive species. The Section 11 grazing lease should not be transferable to other parties but the current lessee should be allowed to graze the area for as long as he wishes.

4. Because of the proximity of Saskatoon Island Provincial Park, it is suggested that periodic patrols be made by

the staff there, especially on weekends and during the hunting season, to ensure that regulations applying to natural areas and ecological reserves are being followed. This would help maintain a law enforcement element in the area.

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9.0 Appendices

9.1 Annotated Lists of the Vertebrates

Forty-six species of birds, eleven mammals, and three amphibians have been recorded for the study area. Thirty-five species of birds are believed to nest here and are marked with an asterisk*.

Names for the birds follow the A.O.U. Checklist of North American Birds, including the latest supplement (A.O.U. 1982). Names for the mammals follow Banfield (1974).

BIRDS

Cooper's Hawk - one adult June 25 chasing an American Robin in young aspen on west slope, Site Y.

*Northern Goshawk - found in two areas of mature woodland: one adult in aspen-poplar (Site M_2) and one immature in nearby spruce June 25; one adult in spruce-poplar-aspen close to an empty nest and one adult flying across a cutline not far away, August 13.

*Red-tailed Hawk - one near SW boundary of Study Area June 25, three August 12 along powerline on west slope in poplar-aspen woods, and one and two (June 24 and August 13 respectively) on east side in vicinity of cleared fields.

*Ruffed Grouse - a total of two females with broods in aspen (Site S) and near forest clearings (T_1 and T_2) on east side, June 25.

Killdeer - two in disturbed area at D.N.D. sewage lagoons August 14.

Spotted Sandpiper - one at D.N.D. sewage lagoons August 14.

Solitary Sandpiper - one flying over Study Area August 14.

*Yellow-bellied Sapsucker - Uncommon in aspen or mixed spruce-deciduous woods often in the vicinity of alder-birch communities, mostly east of main N-S road; nest with young in aspen in mixed woods west of main road June 28.

*Hairy Woodpecker - only two, one near Site E June 25, and one in old balsam poplar near east boundary.

Northern Flicker - one calling from aspen-poplar woods near powerline on west slope, June 24, is the only record.

*Olive-sided Flycatcher - only three June records of singing birds, one near roadside at SW corner of Study Area and at least one just west of main N-S road. One singing in SE August 13. Usually needs conifers near water but habitat not determined in Study Area.

*Western Wood-Pewee - regular in spruce or spruce-deciduous mixed woods, mostly east of main N-S road. Local in aspen-poplar woods.

*Alder Flycatcher - uncommon in low-lying dense shrubbery in central portion of Study Area, including alder-birch thickets and willow-alder swamp.

*Least Flycatcher - common in aspen and balsam poplar woods.

Tree Swallow - a few feeding over D.N.D. site August 14.

Barn Swallow - a few feeding over D.N.D. site August 14.

*Gray Jay - a total of three family groups in alder-willow, alder-birch and old spruce.

Blue Jay - one in old spruce on east side August 14.

*Black-capped Chickadee - three June and 6 August records in aspen and balsam poplar woods and shrub thickets.

*Boreal Chickadee - very local in the more extensive stands of spruce.

*Red-breasted Nuthatch - present in most spruce stands sampled as well as spruce-deciduous mixed woods.

*House Wren - uncommon in deciduous woods with dense shrubbery.

*Golden-crowned Kinglet - present in many mature spruce stands.

*Ruby-crowned Kinglet - uncommon in spruce and mixed spruce-deciduous woods; more common in migrating flocks in shrubbery of east side in August.

*Swainson's Thrush - common in damper woodlands with dense tall shrubbery.

*American Robin - present in a variety of woodland situations, often in the vicinity of tall spruce; very common on the grounds of the D.N.D. station June 24.

*Cedar Waxwing - regularly seen flying overhead, singly or in small groups; when perched, seemingly preferred edges of shrubbery or woodland.

*Solitary Vireo - rare, only two records of singing birds June 25 in mixed spruce-deciduous woods with tall mixed shrubbery, and spruce woods, on the west and east sides of the main N-S road respectively.

*Warbling Vireo - common in deciduous and sometimes mixed woods with a tall dense understory, and at the edge of alder-birch thickets.

*Philadelphia Vireo - a total of three singing bird in low-lying aspen with a thick understory at the edge of alder-birch, June 24; apparently restricted to east side of main N-S road, Sites D, F and G.

*Red-eyed Vireo - uncommon in aspen and balsam poplar woodlands; not associated with alder-birch.

*Tennessee Warbler - uncommon; 4 singing males in June on east and west sides of main N-S road in aspen and mixed coniferous-deciduous woods.

*Orange-crowned Warbler - sparsely distributed in thick alder-birch and alder-willow shrubbery, and deciduous woods including aspen on west slope.

*Yellow Warbler - common in tall shrubby understory of aspen and poplar woods as well as dense thickets of shrubs.

*Yellow-rumped Warbler (Myrtle subsp.) - common in spruce and mixed spruce-deciduous woodlands.

*Black-and-white Warbler - uncommon in damp tall shrubbery in deciduous woods.

*American Redstart - locally common in tall understory of damp woodland and in alder thickets.

*Ovenbird - very local in aspen and aspen-balsam poplar woods with lush understory, mostly east of main N-S road.

*Mourning Warbler - sparsely distributed in drier aspen and balsam poplar woodland with a dense shrubby understory.

Common Yellowthroat - rare, only one singing at edge of shrubbery (T_1 and T_2) June 24, and one on east side August 13.

*Canada Warbler - rare in aspen and balsam poplar with dense alder understory on west side of main N-S road.

*Western Tanager - local and uncommon in spruce and mixed spruce-deciduous woodland.

*Rose-breasted Grosbeak - local and uncommon in aspen, poplar and mixed aspen-poplar-spruce woodland.

*Chipping Sparrow - local and uncommon in mixed and deciduous woods.

*Fox Sparrow - rare and local in damp birch-alder-aspen-willow (Site E) and willow-alder swamp (near Site Z).

Song Sparrow - one noted August 13 in SE of Study Area, also a possible sighting of two along N-S road June 24.

*Lincoln's Sparrow - uncommon and local in wet areas along cutlines and roads, and in wet sedge meadow (Site H).

*White-throated Sparrow - common in deciduous and mixed deciduous-coniferous woods with dense shrubbery, as well as alder thickets.

*Dark-eyed Junco (Slate-colored subsp.) - regular but uncommon in spruce and mixed spruce-deciduous woods; occasional in aspen woods on west side.

*Brown-headed Cowbird - regular but uncommon throughout area, usually seen flying overhead.

*Northern Oriole (Baltimore subsp.) - rare, two singing males in June, one on west slope in young aspen and one on east side in poplar-aspen near Site K.

*Purple Finch - uncommon in mixed spruce-aspen -balsam poplar woods and woodland pond, Site K.

Red Crossbill - two records of small flocks flying overhead, June 24 and August 14.

*White-winged Crossbill - flocks common in spruce stands and flying over Study Area.

Pine Siskin - common flying over Study Area usually in small groups and often in the vicinity of spruce.

American Goldfinch - only one flying over Study Area June 24.

Evening Grosbeak - uncommon, usually noted flying overhead, occasionally in spruce stands.

MAMMALS

Snowshoe Hare - present in spruce, spruce-aspen, and poplar-aspen woods with a dense understory.

Least Chipmunk - noted only once, on east side in deciduous woods with dense shrubby understory.

Woodchuck - one dead on paved road on south slope; reports of "marmots" in the past undoubtedly referred to this species.

Columbian Ground Squirrel - one on mowed lawn at D.N.D. site; this species must have been introduced to the area since its characteristic mountain habitat is totally absent.

American Red Squirrel - uncommon in spruce stands, and also found in mixed woods of spruce-balsam poplar.

Coyote - sign in birch-willow-alder and at the edge of woodland next to cleared fields on east side; an old den in mixed woods west of main N-S road, and several heard June 25 to the south of this site.

American Black Bear - no animals or sign found during study period, but during the 1970's Major Sawchuck of the D.N.D. site estimated 6.

Mountain Lion - reported in area in the past but not seen in recent years.

Lynx - reported in area in the past but not seen in recent years.

Mule Deer - deer sign, not identifiable to species, in spruce, balsam poplar and at edge of woodland next to cleared fields on east side; an antler of this species was found in extensive alder-birch on east side of main N-S road; Major Sawchuck estimated 6 of this species in the 1970's and did not mention White-tailed Deer.

Moose - sign in birch-alder, wet sedge meadow (Site H), and mixed coniferous-deciduous woods; one bull in dense alder-birch on east side, and two cows just south of

Study Area; numbers appear to be down from 1970's when Major Sawchuck estimated 20.

AMPHIBIANS

Western Toad (Bufo boreas) - two found in mixed woods, June 24 (Site V).

Chorus Frog (Pseudacris triseriata) - found once in roadside ditch next to alder-willow shrubbery, June 24.

Wood Frog (Rana sylvatica) - found in aspen, mixed woods (Site V), and around woodland pond (Site K) - a total of 6, all on June 24.

9.2 Annotated List of the Vascular Plants

The following is a listing of native species of vascular plants noted in the study area. Nomenclature generally follows Scoggan (1979). Unreferenced designations of 'local in Alberta' are based on the authors' personal experience with these species. Collections by L. Jenkins are housed at the Canada Department of Agriculture Research Station at Beaverlodge.

Equisetum arvense L. Locally abundant, wet areas along creeks, spruce woods, balsam poplar woods.

E. fluviatile L. Found only at Site 18, pond in aspen woods.

E. sylvaticum L. Common in most of the wetter woodlands and in alder-willow thickets.

Lycopodium annotinum L. Very local in drier spruce woods.

*Athyrium filix-femina (L.) Roth var. sitchense Cordilleran. Common in wetter spruce and birch woodlands and in alder-willow thickets.

Dryopteris austriaca (Jacq.) Woynar Fairly common in alder-willow thickets and in spruce woods.

Gymnocarpium dryopteris (L.) Newm. Fairly common in moist shaded areas under deciduous or coniferous growth.

*Matteuccia struthiopteris (L.) Todaro Found only at Site 11, along creek. Very local in this part of Alberta.

Picea glauca (Moench) Voss Dominant tree in remnant upland forests.

*Pinus contorta Dougl. Cordilleran. Rare individuals found in spruce and in birch-alder thickets. Sites 26, 29, 31.

Typha latifolia L. Found only along ditches by roads and cut-lines.

Agropyron subsecundum (Link) Hitchc. Infrequent in drier aspen woods.

Alopecurus aequalis Sobol. Found only in woodland pond, Site 3.

Bromus canadensis Mx. Found along cutlines and in drier open meadows in alder-willow thickets.

Calamagrostis canadensis (Mx.) Nutt. Frequent in moist habitats.

*Cinna latifolia (Trev.) Griseb. Locally common in alder-willow thickets. Local in Alberta.

Elymus innovatus Beal Infrequent in drier woods and cutlines.

Glyceria pulchella (Nash) Schum. Found only in woodland pond, Site 3.

G. striata (Lam.) Hitchc. Uncommon, along creeks and in wet-lands.

*Phleum alpinum L. Cordilleran. Uncommon, along cutlines and in open meadows in alder-willow thickets. Sites 23, 27.

Poa palustris L. Occasional in wet areas.

Carex aquatilis Wahl. Locally abundant in ponds.

C. bebbii (Bailey) Fern. Found only along cutline, north-middle fence line.

C. brunnescens (Pers.) Poir. Local in moist birch woodland.

C. canescens L. Noted only once in alder-willow thicket at edge of woodland.

C. capillaris L. Noted only along west cutline.

C. deweyana Schw. Found only along west cutline.

C. disperma Dewey Local in wet spruce and birch woodlands.

C. gynocrates Wormsk. Found only in wetland V.

*C. macloviana d'Urv. var. microptera = C. festivella Cordilleran. Found only along west cutline.

*C. mertensii Prescott Cordilleran. Found only along alder-willow thicket along east boundary cutline. Rare (Argus & White 1978); very rare (Packer & Bradley 1978) - only two collections in Alberta.

C. rostrata Stokes Locally common in woodland ponds.

C. tenera Dewey Found only along stream, Site 11.

*Eriophorum russeolum Fries var. albidum = E. chamissonis var. albidum Found only in wet meadow, Site 21. Listed as uncommon in Packer & Bradley (1978).

Luzula parviflora (Ehrh.) Desv. Uncommon, in open meadows in alder-willow thickets.

Disporum trachycarpum (Wats.) B.& H. Fairly common in slope aspen and poplar woods.

Lilium philadelphicum L. var. andinum Occasional in slope aspen.

Maianthemum canadense Desf. Occasional in deciduous woods, most common on slopes.

*Smilacina racemosa (L.) Desf. var. amplexicaulis Cordilleran. Fairly common in all but the wettest habitats.

Smilacina stellata (L.) Desf. Occasional in slope aspen woods.

S. trifolia (L.) Desf. Found only in the series of woodland ponds on the west side.

*Streptopus amplexifolius (L.) DC. var. americanus Cordilleran. Infrequent, mostly in alder-willow thickets but also in mature aspen and spruce woods, especially along drainage ways.

*Corallorhiza maculata Raf. Local in west slope aspen woods. Listed as uncommon in Packer & Bradley (1978).

*C. striata Lindl. Rare in balsam poplar adjacent wet willow, Site AA, and in aspen-balsam poplar above L_1. Listed as uncommon in Packer & Bradley (1978).

C. trifida Chat. Known only from spruce woods, Site U.

Habenaria hyperborea (L.) R. Br. Found only at Site 6, along drainage in aspen-poplar.

H. obtusata (Pursh) Richards. Recorded only along wet drainage way at L_3.

H. viridis (L.) R.Br. var bracteata Local in aspen ridges on west slope.

Orchis rotundifolia Banks Found only in wet drainage way at L_3.

Populus balsamifera L. Dominant tree species in wetter woods.

P. tremuloides Mx. Dominant tree species on slopes and drier sites on plateau.

Salix bebbiana Sarg. Local in alder-willow thickets.

S. discolor Muhl. Dominant willow in alder-willow, also found in woodlands. Represented in part by var. latifolia (S. scouleriana).

S. maccalliana Rowlee Rare at edge of woodland ponds.

S. monticola Bebb Rare at edge of woodland ponds.

S. myrtillifolia Anderss. var pseudomyrsinites Rare at edge of woodland ponds.

S. pedicellaris Pursh Found only in wetlands, Sites 21 and 28.

*Alnus crispa (Sit.) Pursh ssp. sinuata Cordilleran. Widespread in woodlands and alder-willow thickets, tending to favor drier sites.

Alnus rugosa (Du Roi) Spreng. = A. tenuifolia Common in alder-willow thickets, tending to favor wetter sites.

Betula papyrifera Marsh Dominant tree species on portion of plateau, where drainage is impeded.

* Urtica dioica L. var. lyallii Cordilleran. Locally common in dense alder-willow thickets.

Geocaulon lividum (Rich.) Fern. Collected by L. Jenkins, #644.

Polygonum amphibium L. sens. lat. Found only in woodland pond, Site 18.

Rumex maritimus L. Found only in woodland pond, Site 3.

Arenaria lateriflora L. Local in west slope aspen, usually near drainages.

Stellaria calycantha (Ledeb.) Bong. Frequent in wet areas around woodland ponds and in alder-willow thickets.

S. longipes Goldie sens. lat. Collected by L. Jenkins.

Actaea rubra (Ait.) Willd. Locally common in birch and older aspen woods.

*Clematis verticellaris DC. var. columbiana Cordilleran. Rare in spruce woods.

Delphinium glaucum Wats. Fairly common throughout, most common in openings in alder-willow thickets.

Ranunculus abortivus L. Rare in alder-willow thickets.

R. macounii Britt. Infrequent in wet areas in alder-willow and at edges of woodland ponds.

*Thalictrum occidentale Gray Cordilleran. Widespread in all but the wettest habitats.

Arabis divaricarpa Nels. Collected by L. Jenkins, roadside # 356.

Cardamine pensylvanica Muhl. Found only in woodland pond, Site 18.

Draba aurea Vahl Found only in woodland opening, edge of west slope, Site Y.

Chrysosplenium alternifolium L. Locally common along creeks and drainages.

Mitella nuda L. Widespread in all but the wettest areas.

*Parnassia palustris L. var. montanensis Cordilleran. Found only in woodland pond, Site L_2.

Ribes glandulosum Gr. Local in woodlands and in alder-willow thickets.

R. hudsonianum Richards. Locally common in wet areas by woodland ponds and in alder-willow thickets.

R. lacustre (Pers.) Poir Uncommon in spruce woods.

R. oxyacanthoides L. Scarce, in drier deciduous woods.

Amelanchier alnifolia Nutt. Rare, in drier aspen woods.

Fragaria virginiana Dene. Uncommon in drier aspen woods.

Geum aleppicum Jacq. Uncommon in wet areas in alder-willow thickets.

Potentilla norvegica L. Found only at woodland pond, Site 18.

P. palustris (L.) Scop. Found only in ponds, Sites 21, 18, 28.

Prunus virginiana L. Uncommon in aspen and balsam poplar on slopes.

Rosa woodsii Lindl. Widespread, in all but the wettest sites.

Rubus acaulis Kx. Uncommon, only along the wettest sites.

R. idaeus L. var. strigosus Occasional in alder-willow thickets and poplar woods.

*R. parviflorus Nutt. Cordilleran. Widespread in woodlands and alder-willow thickets, locally abundant. Local in this part of Alberta.

R. pubescens Raf. Widespread, in all but the wettest habitats.

*Sorbus scopulina Greene Cordilleran. Fairly common in alder-willow thickets, occasional in mature spruce woods. Very local in Alberta.

*Spiraea betulifolia Pallas Cordilleran. Locally common in aspen woods along the eastern boundary on the plateau. Sites 40, 27, 20, 15, 12.

Astragalus americanus (Hook.) Jones Collected by L. Jenkins, #240.

Lathyrus ochroleucus Hook. Fairly common in aspen woods.

Vicia americana Muhl. Fairly common in aspen woods.

*Impatiens capensis Meerb. Scarce, mostly in alder-willow thickets in wet shaded sites. Listed as uncommon in Packer and Bradley (1978). Sites 35, 43.

Viola rugulosa Greene Fairly common in aspen and poplar woods.

V. renifolia Gray Uncommon in alder-willow thickets in wet shaded areas.

*V. selkirkii Pursh Rare, found only along creek in Site 13. Rare (Argus and White 1978, Packer and Bradley 1978). Only three collections in Alberta.

Shepherdia canadensis (L.) Nutt. Infrequent in drier woods.

*Circaea alpina L. var. pacifica Cordilleran. Widespread in spruce, birch, and alder-willow habitats.

Epilobium angustifolium L. Widespread, in all but the wettest habitats.

E. glandulosum Lehm. Very locally abundant in woodland ponds.

E. palustre L. Found only in woodland pond at Site L_2.

Hippuris vulgaris L. Found only along wet creek bottom, L_2.

Aralia nudicaulis L. Widespread, in all but the wettest habitats.

*Angelica genuflexa Nutt. Cordilleran. Locally abundant, but generally infrequent in alder-willow thickets and wet areas in woods. Listed as uncommon in Packer and Bradley (1978).

Heracleum lanatum Mx. Occasional in poplar and birch woods and in alder-willow thickets.

*Osmorhiza chilensis H. & A. sens. lat. Cordilleran. Widespread in plateau woodlands. Local in Alberta.

Cornus canadensis L. Widespread, in all but the wettest sites.

C. stolonifera Mx. Local dominant in woodland understory, especially in balsam poplar.

Pyrola asarifolia Mx. Common in slope aspen and poplar, occasional in other woodlands.

P. secunda L. Occasional in aspen and poplar woods.

P. virens Schw. Occasional in spruce woods.

Gentianella amarella (L.) Born. Noted only along cutlines.

Mertensia paniculata (Ait.) Don Widespread, in all but the wettest habitats.

Mentha arvensis L. Found only at woodland pond, Site 3.

Scutellaria galericulata Bent. Found only by woodland pond, Site 28.

Castilleja miniata Dougl. Cordilleran? Scarce, along cutlines and in drier meadows in alder-willow thickets, Sites 27,41.

Rhinanthus crista-galli L. Found only along cutline by entrance to D.N.D. site.

Veronica americana Schw. Occasional along creeks.

V. scutellata L. Scarce, in woodland ponds.

Galium trifidum L. sens. lat. Occasional in woodland ponds.

G. triflorum Mx. Widespread, in all but the wettest sites.

Linnaea borealis L. Common in spruce woods, occasional in other woodlands.

Lonicera dioica L. Occasional in slope aspen and poplar woods.

L. involucrata (Richards.) Banks Common in spruce and alder-willow thickets.

Symphoricarpos albus (L.) Blake Fairly common in aspen and poplar woods.

Viburnum edule (Mx.) Raf. Widespread, in all but the wettest sites.

*Adoxa moschatellina L. Very local, in spruce woods, Site P. Rare (Boivin 1972). Local in Alberta.

Achillea sibirica Ledeb. Noted only along cutlines.

Antennaria neodioica Greene = A. neglecta Collected by L. Jenkins, #690, open places in woods.

A. pulcherrima (Hook.) Greene Collected by L. Jenkins, #254, open places.

*Arnica cordifolia Hook. Cordilleran. Very locally common in aspen woods on the plateau, Sites 38, 30.

Aster ciliolatus Lindl. Infrequent in drier aspen woods.

A. conspicuus Lindl. Cordilleran? Locally common in woodlands and alder-willow thickets.

A. puniceus L. Found only in woodland wetland, Site 5.

*Circium foliosum (Hook.) DC. Cordilleran. Noted only in dry meadow in alder-willow thicket, Site 10. Local in Alberta.

Hieracium canadense Mx. sens. lat. Noted only along cutlines.

Petasites palmatus (Ait.) Gray Widespread, in all but the wettest sites.

P. sagittatus (Banks) Gray Locally common in woodland ponds.

*Senecio eremophilus Richards. Noted along cutlines and in dry meadow near creek, Site 11. Local in Alberta.

Solidago canadensis L. Noted only along cutlines.

9.3 Field Notes

24 June (sunny, warm)

Site A - aspen with thick understory
Red-eyed Vireo - 1 singing, Warbling Vireo - 1 singing,
Yellow Warbler - 1 singing, American Robin - 1 singing,
White-throated Sparrow - 1 singing, Song Sparrow?- 2,
Lincoln's Sparrow - 1

Site B - aspen with thick understory
American Redstart - 4 singing, Least Flycatcher - 1,
Swainson's Thrush - 1 singing

Site C - edge of birch and alder
Cedar Waxwing - small flock flying over; Moose scat

Site D - aspen with thick understory at edge of alder-birch
Black-and-white Warbler - 1 singing, Yellow Warbler - 1,
Warbling Vireo - 1 singing, Philadelphia Vireo - 1 singing,
Least Flycatcher - 3+ singing, Swainson's Thrush - 1
singing, White-throated Sparrow - 1 singing

Site E - similar to last site
Fox Sparrow - 1 singing, Least Flycatcher - 1 singing,
Hairy Woodpecker - 1 calling in the distance

Site F - similar to last sites
Yellow Warbler - 1 singing, Philadelphia Vireo - 1 singing,
Least Flycatcher - 2+ singing, Robin - 1, Yellow-bellied
Sapsucker - 2
Warbling Vireo - 1 singing, Yellow Warbler - 1 singing,
Brown-headed Cowbird - 1 singing

Site G - similar to last 3 sites
American Redstart - 1 singing, Yellow Warbler - 2 singing, Orange-crowned Warbler - 2 singing, Philadelphia Vireo - 1 singing, Warbling Vireo - 1 singing, Alder Flycatcher - 2 singing, Least Flycatcher - 1 singing

Site H - sedge meadow (wet)
Lincoln's Sparrow - 2, Pine Siskin - small groups flying over; in woods at edge: Brown-headed Cowbird - 1, White-throated Sparrow - 1, Evening Grosbeak - 1 calling, Cedar Waxwing - 1+ calling, Yellow Warbler - 3+ singing, Least Flycatcher - 6+ singing, Swainson's Thrush - 1 singing

woodland: Moose scat

Site I - old spruce
singing: Western Wood-Pewee - 1, Yellow-rumped Warbler - 1, Golden-crowned Kinglet - 1, Western Tanager - 1; Red-breasted Nuthatch - 2 calling; Snowshoe Hare scat
White-throated Sparrow - 1 singing nearby

Site J - old spruce
singing: Red-breasted Nuthatch - 1, Yellow-rumped Warbler - 2, White-winged Crossbill - 1+, Western Wood-Pewee - 1;
Red Squirrel - 1 calling

mixed woods: Yellow-rumped Warbler - 1 singing, Dark-eyed Junco (Slate-colored) - 1 singing, Yellow-bellied Sapsucker - 1, Yellow-rumped Warbler (Myrtle) - 1 with food

Deciduous woods

singing: Black-and-white Warbler - 1, Northern Oriole (Baltimore) - 1, Yellow Warbler - 2+, Least Flycatcher - 5+, Swainson's Thrush - 1

Site K - woodland pond

(deciduous woods around pond) Pine Siskin - small groups flying overhead, Cedar Waxwing - 1 flying over;
singing: House Wren - 1, Least Flycatcher - several, Yellow Warbler - 2, American Robin - 1, Purple Finch - 1;
Wood Frog - a few

Spruce

singing: Yellow-rumped Warbler - 2, Boreal Chickadee - 1, White-winged Crossbill - 1, Ruby-crowned Kinglet - 1

Deciduous woods

Rose-breasted Grosbeak - 1 singing, Evening Grosbeak - 2 flying, Black-and-white Warbler - 1 singing

Below cliff at west side (late afternoon, early evening)

singing: Western Wood-Pewee - 1, Least Flycatcher - 1, Warbling Vireo - 1, Red-eyed Vireo - 1, Orange-crowned Warbler - 1, Mourning Warbler - 1, American Robin - 1, Purple Finch - 1, Dark-eyed Junco - 2; White-winged Crossbill - 1 flying, Pine Siskin - small groups flying, Common Flicker - 1 calling, Swainson's Thrush - 1 calling, Cedar Waxwing - 2+ flying

Site O - aspen woods

Actaea rubra, Thalictrum occidentale, Viburnum edule, Linnaea borealis, Epilobium angustifolium, Populus balsamifera, P. tremuloides, Osmorhiza chilensis, Pyrola asarifolia, Fragaria virginiana, Rosa woodsii, Alnus crispa, Gymnocarpium dryopteris, Equisetum arvense;
in bloom: Cornus stolonifera, Lathyrus ochroleucus, Arnica cordifolia, Aralia nudicaulis, Mertensia paniculata, Maianthemum canadensis, Rubus pubescens, Lonicera involucrata, Cornus canadensis, Pyrola secunda, Smilacina racemosa;
singing: Red-eyed Vireo, American Robin, Yellow Warbler - 2, Warbling Vireo, White-throated Sparrow, Least Flycatcher - 2; Cedar Waxwing - call, Pine Siskin - overhead

Site P - Mixed spruce-aspen

Smilacina racemosa, Arnica cordifolia, Galium triflorum, Gymnocarpium dryopteris, Rubus pubescens, Alnus crispa, Equisetum arvense, Viburnum edule, Actaea rubra, Betula papyrifera, Picea glauca, Circaea alpina and Adoxa moschatellina - abundant locally, Sorbus scopulina - good stand at edge
blooming: Aralia nudicaulis, Maianthemum canadensis, Mertensia paniculata, Mitella nuda, Osmorhiza chilensis;
singing: Western Tanager, Yellow-rumped Warbler, Dark-eyed Junco, Swainson's Thrush, White-throated Sparrow, Golden-crowned Kinglet, Warbling Vireo - 2, Purple Finch; Brown-headed Cowbird - overhead, Red-breasted Nuthatch - call, Red Crossbill - call;
Snowshoe Hare, Red Squirrel - call

Alder thickets

Urtica gracilis, Carex disperma, Heracleum lanatum;

Yellow Warbler - 2, American Redstart - 1 imm. singing, Black-capped Chickadee, White-throated Sparrow; at edge: Yellow-bellied Sapsucker - call, Ovenbird - singing

Site Q - mixed open birch; some aspen woods; some patches of willow, mountain ash and alder; understory of Viburnum edule and Epilobium latifolium

Petasites palmatus, Carex brunnescens, Pinus contorta, Lycopodium annotinum; good stands mountain ash; singing: Warbling Vireo - 2, Yellow Warbler - 2, Least Flycatcher, American Redstart (thick alder), Swainson's Thrush, White-throated Sparrow - 3, Philadelphia Vireo ?, Alder Flycatcher; Yellow-bellied Sapsucker - tapping

Site R - aspen with good stands of thimbleberry

Viola canadensis, Vicia americana, Spiraea lucida, Cornus stolonifera, Ribes oxyacanthoides, R. glandulosum; singing: White-throated Sparrow, Warbling Vireo , Yellow Warbler - 2, Least Flycatcher - 4, Mourning Warbler - 2, Western Wood-Pewee, Swainson's Thrush, Ovenbird; Yellow Warbler - 3 singing, Least Flycatcher - 1 singing, American Goldfinch - overhead, Black-capped Chickadee - call

Alder thicket

singing: Alder Flycatcher - 2, American Redstart - 2; in depression at edge: Chrysosplenium alternifolium, Streptopus amplexifolius, Geum allepicum, Carex disperma

Site S - aspen

singing: Rose-breasted Grosbeak, Yellow Warbler - 3, Red-eyed Vireo, Swainson's Thrush; Ruffed Grouse with brood

Site T_1 and T_2 - clearings resulting from grazing and probably former clearing

Salix bebbiana, Delphinium glaucum;
Common Yellowthroat-singing at edge of shrubs,
American Redstart, Ruffed Grouse with brood

Aspen

singing: Swainson's Thrush - 3, Yellow Warbler - 2;
Red-tailed Hawk - call; Wood Frog

Alder

American Redstart

Site U - spruce

singing: Yellow-rumped Warbler, Dark-eyed Junco, White-throated Sparrow (by stream), Mourning Warbler (at edge);
Western Wood-Pewee - 2 call, Red-breasted Nuthatch;
Chrysosplenium alternifolium

Alder-willow by main N.-S. road

singing: Tennessee Warbler, Orange-crowned Warbler - 2,
House Wren (edge aspen); Gray Jay - family group;
Chorus Frog in ditch

By tower along N.-S. road

singing: Fox Sparrow, Lincoln's Sparrow

Site V - open spruce-willow-aspen-balsam poplar

singing: Tennessee Warbler, American Redstart, Least Flycatcher, Yellow Warbler, Western Wood-Pewee, Purple Finch; American Robin, White-throated Sparrow - singing and a family group; less diversity of birds further W.
Western Toad - 2, Wood Frog - 2; Moose sign

Site W - aspen

singing: Swainson's Thrush, Yellow Warbler - 2, Least Flycatcher, Lincoln's Sparrow (edge of cutline); Pine Siskin - call

25 June (partly sunny, warm)

Post-dawn along roadside -

singing: Brown-headed Cowbird - 2, Swainson's Thrush - 1, Western Wood-Pewee - 1, Least Flycatcher - 9, Red-eyed Vireo - 2, Yellow Warbler - 5, Mourning Warbler - 2, White-throated Sparrow - 1, Olive-sided Flycatcher - 1, Dark-eyed Junco - 1; Cedar Waxwing - 2+, Black-capped Chickadee - 1

just S. of study area: Red-tailed Hawk - 1, Rose-breasted Grosbeak - 1 singing

Site M_1 - alder-birch with occasional poplar and spruce

singing: Orange-crowned Warbler - 1, Tennessee Warbler - 1, Swainson's Thrush - 1, White-throated Sparrow - 1, Purple Finch - 1, Yellow Warbler - 1; Gray Jay - 2, Pine Siskin - small numbers flying over, White-winged Crossbill - 2+ flying, Brown-headed Cowbird - 1

Site M_2 - large poplar and aspen with occasional spruce

Northern Goshawk - 1 adult, Brown-headed Cowbird - 1, Canada Warbler? - singing in distance

Site M - open mature aspen with lush understory fading into dense alder understory with occasional spruce

White-winged Crossbill - small flock in spruce, Western Tanager - 1 singing from spruce stand, Pine Siskin - small numbers flying over, Yellow-rumped Warbler - 1 singing

Yellow-bellied Sapsucker - 1, Golden-crowned Kinglet -1 in spruce stand, Swainson's Thrush - 2 singing, Yellow Warbler - 1 singing

Mixed woodland and shrubbery

singing: Chipping Sparrow - 1, Ruby-crowned Kinglet - 1, Warbling Vireo - 1, Solitary Vireo - 1, Yellow-rumped Warbler - 1, Mourning Warbler - 1, Western Tanager - 1; Red Squirrel - 1

Spruce adjacent alder lowland

Red-breasted Nuthatch - 1 singing, Swainson's Thrush - 1 singing, Yellow-bellied Sapsucker nest with young in aspen, Northern Goshawk - 1 imm.

Yellow-rumped Warbler - 1 singing, Chipping Sparrow - 1 singing

Dark-eyed Junco - 1 singing, Red-breasted Nuthatch - 1 singing, Golden-crowned Kinglet - 1 singing, White-winged Crossbill - 1 singing; old Coyote den and several Coyotes calling in the distance

singing: Yellow Warbler - 3, Yellow-rumped Warbler - 1, Warbling Vireo - 2, Least Flycatcher - 2, Swainson's Thrush - 2

Very thick red-osier understory

singing: Alder Flycatcher - 2, Warbling Vireo - 1, American Redstart - 2, Orange-crowned Warbler - 1

Woods adjacent N.-S. road (west side)

singing: Least Flycatcher - 1, Black-and-white Warbler -1, Yellow Warbler - 1, Olive-sided Flycatcher - 1 in distance, Western Tanager - 1 in distance, Warbling Vireo - 1, Swainson's Thrush - 1, Red-breasted Nuthatch -2; Cedar Waxwing - 1+ flying over

Woods on east side of road

singing: White-throated Sparrow - 1, Least Flycatcher - 1, Western Wood-Pewee - 1, Yellow Warbler - 1; Cedar Waxwing - 1+ flying over, White-winged Crossbill flock flying over

Old spruce stand

singing: Swainson's Thrush - 1, Yellow-rumped Warbler - 1, White-winged Crossbill - 1 singing; Red Squirrel - 2 calling

Deciduous stand

singing: Orange-crowned Warbler - 1, Yellow Warbler - 2, White-throated Sparrow - 2, Mourning Warbler - 1

Old spruce (dense, extensive)

singing: Ruby-crowned Kinglet - 1, Golden - crowned Kinglet - 1, Dark-eyed Junco - 1, Solitary Vireo - 1, Western Tanager - 1, Red-breasted Nuthatch - 1, Boreal Chickadee - 1, Yellow-rumped Warbler - 1; Pine Siskin - small numbers flying over, Gray Jay - 2+, Evening Grosbeak - small flock flying overhead, Brown-headed Cowbird - 1

Deciduous woodland

Ovenbird - 1 singing, Tennessee Warbler - 1 singing, Chipping Sparrow - 1 singing, Least Flycatcher - 1 singing; Cedar Waxwing - 2+

Above dirt-bike slope at west side of hill (same as Site Y)

Yellow-rumped Warbler - 1 singing in aspen, Cooper's Hawk - 1 chasing a robin

Site X - aspen-balsam poplar with dense alder understory
(starts at end of road)

singing: Least Flycatcher - 2, Canada Warbler, Black-and-white Warbler, Yellow Warbler, American Redstart, Red-eyed Vireo, Yellow-rumped Warbler, Ovenbird, Warbling Vireo (edge aspen-tall shrubs); White-throated Sparrow -female, Swainson's Thrush - call, American Robin - call

Site Y - young aspen on slope

singing: Orange-crowned Warbler, White-throated Sparrow; Dark-eyed Junco, Northern Oriole - flying, White-winged Crossbill and Brown-headed Cowbird overhead

Aspen-herb

singing: Red-eyed Vireo, Swainson's Thrush

Site Z - Sedge marsh (no birds)

Willow-alder swamp

singing: Fox Sparrow, White-throated Sparrow -2, Alder Flycatcher - 2, Yellow Warbler - 2

Site AA - mature balsam poplar

striped coral-root blooming;

singing: White-throated Sparrow, Yellow Warbler - 3

Aspen

singing: Yellow Warbler - 5, Warbling Vireo, Western Wood-Pewee; American Robin - call

Site BB - roadside shrubs

Chipping Sparrow

Aspen

singing: Dark-eyed Junco, Yellow Warbler - 2, Least Flycatcher - 2

Site CC - spruce

singing: Ruby-crowned Kinglet, Golden-crowned Kinglet, Swainson's Thrush, Western Wood-Pewee, White-winged Crossbill - a few; Red-breasted Nuthatch - call, American Robin - 2 call, Ruby-crowned Kinglet.

Mixed spruce-balsam poplar

singing: Western Tanager - 2, Least Flycatcher, Ruby-crowned Kinglet, White-winged Crossbill; Boreal Chickadee - call, Brown-headed Cowbird - overhead; Moose tracks; good sized spruce; twisted-stalk, mountain ash, Rubus strigosus

Balsam Poplar

singing: Rose-breasted Grosbeak, White-throated Sparrow, Yellow Warbler, Mourning Warbler; (dense understory): Canada Warbler, Swainson's Thrush; Brown-headed Cowbird - overhead; deer tracks; Alnus tenuifolia - on wet sites

Willow-alder

Redstart - singing

Birch-willow-alder

Swainson's Thrush - singing; Coyote tracks

N.-S. main road-cutline junction

singing: Olive-sided Flycatcher (from spruce?), Tennessee Warbler (aspen), Mourning Warbler (aspen); overhead: White-winged Crossbills, Pine Siskins, Evening Grosbeak

12 August (cool, very windy)

West slope near powerline

White-throated Sparrow - 1 singing, American Robin - 1, Red-tailed Hawk - 3, Least Flycatcher - 1 in mature poplar, Red-eyed Vireo - 2, Black-capped Chickadee - 2+; Snowshoe Hare - 1

13 August (cool, showery) East side of study area

Near cleared areas

Coyote and deer tracks; Red-tailed Hawk - 2, Black-capped Chickadee - 2+, Song Sparrow - 1, Yellow Warbler - 1, Olive-sided Flycatcher - 1 singing

Deciduous shrubbery and woods

mixed flock: Black-capped Chickadee - 3+, House Wren -1, Least Flycatcher - 1, Dark-eyed Junco - 2+, American Redstart - 2+, Ruby-crowned Kinglet - 1, Common Yellowthroat - 1; Pine Siskin - small flock overhead; Least Chipmunk - 1

Spruce

Blue Jay - 1, Swainson's Thrush - 1, Golden-crowned Kinglet - 1; deer scat

Grazed shrubbery (open willow-birch)

Cedar Waxwing - several, White-throated Sparrow - small flock, American Redstart - 2+, Yellow Warbler - 1 singing

Balsam poplar woods

mixed flock: Black-capped Chickadee - 6+, Warbling Vireo - 1, Red-eyed Vireo - 2+, Yellow Warbler - 1, American Redstart - 1, Hairy Woodpecker - 1

Old spruce, poplar and aspen

small flock Golden-crowned Kinglets, Rose-breasted Grosbeak - 1, House Wren - 1, old Goshawk nest and 1 adult Goshawk a short distance away, Pine Siskin - small numbers overhead

dead Woodchuck on road, Mule Deer antler in dense alder-birch, Moose - 2 cows in cultivated field just south of study area

Tree Swallows and Barn Swallows feeding over station

14 August (cool, showery)

Central portion of study area (alder-birch unless noted otherwise)

Solitary Sandpiper - 1 flying over, Black-capped Chickadee - 2 flocks, Yellow Warbler - 1, Least Flycatcher - 1, Purple Finch - 2+, Red Crossbill - 1 flock over area, Pine Siskin - small flocks over area;
mixed flock: Ruby-crowned Kinglet - 3, Mourning Warbler - 1, plus a number of birds moving too fast to identify;
deer scat

Spruce

White-winged Crossbill - small flock with some birds singing, Golden-crowned Kinglet - small numbers noted in most spruce stands

Sewage lagoon area

Killdeer - 2, Spotted Sandpiper - 1

9.4 Data Sheets

Data Sheets and Observation Sites (Numbers 1-43)

The following are vegetation data sheets for sites where detailed vegetation work was carried out. The detailed sheets are based on 30 metre diameter ocular plots. These are filled out for sites 1,5,7,14,17,18,20,21,22,23,28,33.

The remaining sites were not locations for detailed vegetation work, however, most are noted because of some significant vegetation or plant species. Descriptions of these can be found after the data sheets.

All sites are noted on the aerial photographs accompanying this report.

NATURAL AREAS - PLANT CLASSIFICATIO

OBSERVERS: C. Wallis C. Wershler DATE: A . 11/82

SOCIATION NAME: Populus balsamifera - Cornus stolonifera - Viburnum edule

LOCATION: Saskatoon Mountain Site 1

Slope 5%	Aspect west	Topo. pos. mid-slope	Microrelief slightly rolling
Soil Order		Great Group	

Drainage Class	Moisture Regime	Ground Cover	Stability Index
1. V. rapid	1. xeric	bare rock %	1. unstable
2. rapid	2. xero-mesic	min. soil %	2. rapid change
3. well	3. mesic	humus %	3. moderate chg.
4. fresh X	4. hydro-mesic X	wood 5 %	4. slow chg.
5. impeded	5. hygric	water %	5. stable X
6. poor	6. hygro-hydric	gym. detr. %	6. climax
7. stagnant	7. hydric	ang. detr. 5 %	bryoid present %

GROWTH-FORMS	dbh (cm) max	dbh (cm) $\bar{X}$	Ht ($\bar{X}$)	CC	Ht ($\bar{X}$)	CC	Ht ($\bar{X}$)	CC	Tot CC
Trees			2-10m		10-20m		> 20m		
1. Broadlf. dec.									
2. Needlelf dec.									
3. Needlelf evg.									
Shrubs (+juv. trees)			0-0.3m		0.3-2m		> 2m		
4. Broadleaf deciduous									
5. Broadleaf evergreen									
6. Needleleaf deciduous									
7. Needleleaf evergreen									
Herbs			0-10cm		10-30cm		> 30cm		
8. Compoundleaf forbs									
9. Simpleleaf forbs									
10. Evergreen forbs									
11. Graminoids									
12. Pteridophytes									

Bryoids		Species	dbh	Ht (m)	Rings
13. Upland bryophytes					
14. Peat mosses					
15. Brownmosses					
16. Terricolous lichens					
17. Saxicolous lichens					

Epiphytes: nil = (1) 2 3 4 5 = high

NATURAL AREAS - PLANT CLASSIFICATION

OBSERVERS: C. Wallis, S. Wershler DATE: Aug. 11/82

SOCIATION NAME: Alnus tenuifolia - Salix maccalliana - Salix discolor
Calamagrostis canadensis

LOCATION: Saskatoon Mountain Site 5

Slope 0	Aspect -	Topo. pos. drainage	Microrelief fairly level
Soil Order		Great Group	

Drainage Class	Moisture Regime	Ground Cover	Stability Index
1. V. rapid	1. xeric	bare rock %	1. unstable
2. rapid	2. xero-mesic	min. soil %	2. rapid change
3. well	3. mesic	humus %	3. moderate chg.
4. fresh	4. hydro-mesic	wood 5 %	4. slow chg. X
5. impeded	5. hygric	water %	5. stable
6. poor X	6. hygro-hydric X	gym. detr. %	6. climax
7. stagnant	7. hydric	ang. detr. 5 %	bryoid present %

GROWTH-FORMS	dbh (cm) max	dbh (cm) $\bar{X}$	Ht ($\bar{X}$)	CC	Ht ($\bar{X}$)	CC	Ht ($\bar{X}$)	CC	Tot CC
Trees			2-10m		10-20m		> 20m		
1. Broadlf. dec.									
2. Needlelf dec.									
3. Needlelf evg.									
Shrubs (+ juv. trees)			0-0.3m		0.3-2m		> 2m		
4. Broadleaf deciduous									
5. Broadleaf evergreen									
6. Needleleaf deciduous									
7. Needleleaf evergreen									
Herbs			0-10cm		10-30cm		> 30cm		
8. Compoundleaf forbs									
9. Simpleleaf forbs									
10. Evergreen forbs									
11. Graminoids									
12. Pteridophytes									

Bryoids		Species	dbh	Ht (m)	Rings
13. Upland bryophytes					
14. Peat mosses					
15. Brownmosses					
16. Terricolous lichens					
17. Saxicolous lichens					

Epiphytes: nil = (1) 2 3 4 5 = high

NATURAL AREAS - PLANT CLASSIFICATION

OBSERVERS: C. Wallis, C. Wershler DATE: Aug. 12/82

SOCIATION NAME: Picea glauca - Populus balsamifera - Viburnum edule - Cornus stolonifera

LOCATION: Saskatoon Mountain Site 7

Slope 1%	Aspect N	Topo. pos. gentle slope	Microrelief level
Soil Order		Great Group	

Drainage Class	Moisture Regime	Ground Cover	Stability Index
1. V. rapid	1. xeric	bare rock %	1. unstable
2. rapid	2. xero-mesic	min. soil %	2. rapid change
3. well	3. mesic	humus 5 %	3. moderate chg.
4. fresh X	4. hydro-mesic X	wood 5 %	4. slow chg. X
5. impeded	5. hygric	water %	5. stable
6. poor	6. hygro-hydric	gym. detr. 5 %	6. climax
7. stagnant	7. hydric	ang. detr. 5 %	bryoid 20 %

GROWTH-FORMS	dbh (cm)		Ht ($\bar{X}$)	CC	Ht ($\bar{X}$)	CC	Ht ($\bar{X}$)	CC	Tot CC
Trees	max	$\bar{X}$	2-10m		10-20m		> 20m		
1. Broadlf. dec.									
2. Needlelf dec.									
3. Needlelf evg.									
Shrubs (+juv. trees)			0-0.3m		0.3-2m		> 2m		
4. Broadleaf deciduous									
5. Broadleaf evergreen									
6. Needleleaf deciduous									
7. Needleleaf evergreen									
Herbs			0-10cm		10-30cm		> 30cm		
8. Compoundleaf forbs									
9. Simpleleaf forbs									
10. Evergreen forbs									
11. Graminoids									
12. Pteridophytes									

Bryoids		Species	dbh	Ht (m)	Rings
13. Upland bryophytes					
14. Peat mosses					
15. Brownmosses					
16. Terricolous lichens					
17. Saxicolous lichens					

Epiphytes: nil = 1 (2) 3 4 5 = high

NATURAL AREAS - PLANT CLASSIFICATION

OBSERVERS: C. Wallis, C. Wershler DATE: Aug. 12/82

SOCIATION NAME: Alnus tenuifolia - Rubus parviflorus

LOCATION: Saskatoon Mountain Site 14

Slope 1%	Aspect N	Topo. pos. stream edge	Microrelief slight depression
Soil Order		Great Group	

Drainage Class	Moisture Regime	Ground Cover		Stability Index
1. V. rapid	1. xeric	bare rock	%	1. unstable
2. rapid	2. xero-mesic	min. soil	%	2. rapid change
3. well	3. mesic	humus	%	3. moderate chg.
4. fresh	4. hydro-mesic	wood 5	%	4. slow chg. X
5. impeded X	5. hygric X	water	%	5. stable
6. poor	6. hygro-hydric	gym. detr.	%	6. climax
7. stagnant	7. hydric	ang. detr. 5	%	bryoid present %

GROWTH-FORMS	dbh (cm)		Ht ($\bar{X}$)	CC	Ht ($\bar{X}$)	CC	Ht ($\bar{X}$)	CC	Tot CC
Trees	max	$\bar{X}$	2-10m		10-20m		> 20m		
1. Broadlf. dec.									
2. Needlelf dec.									
3. Needlelf evg.									
Shrubs (+juv. trees)			0-0.3m		0.3-2m		> 2m		
4. Broadleaf deciduous									
5. Broadleaf evergreen									
6. Needleleaf deciduous									
7. Needleleaf evergreen									
Herbs			0-10cm		10-30cm		> 30cm		
8. Compoundleaf forbs									
9. Simpleleaf forbs									
10. Evergreen forbs									
11. Graminoids									
12. Pteridophytes									

Bryoids		Species	dbh	Ht (m)	Rings
13. Upland bryophytes					
14. Peat mosses					
15. Brownmosses					
16. Terricolous lichens					
17. Saxicolous lichens					
Epiphytes: nil = 1 2 3 4 5 = high					

NATURAL AREAS - PLANT CLASSIFICATION

OBSERVERS: C. Wallis, C. Wershler DATE: August 12, 1982

SOCIATION NAME: Alnus tenuifolia - Salix discolor - Sorbus scopulina

LOCATION: Saskatoon Mountain Site 17

Slope 1%	Aspect N	Topo. pos. plateau	Microrelief relatively level
Soil Order		Great Group	

Drainage Class	Moisture Regime	Ground Cover	Stability Index
1. V. rapid	1. xeric	bare rock %	1. unstable
2. rapid	2. xero-mesic	min. soil %	2. rapid change
3. well	3. mesic	humus %	3. moderate chg.
4. fresh	4. hydro-mesic	wood 5 %	4. slow chg. X
5. impeded X	5. hygric X	water %	5. stable
6. poor	6. hygro-hydric	gym. detr. %	6. climax
7. stagnant	7. hydric	ang. detr. 5 %	bryoid present %

GROWTH-FORMS	dbh (cm)		Ht ($\bar{X}$)	CC	Ht ($\bar{X}$)	CC	Ht ($\bar{X}$)	CC	Tot CC
Trees	max	$\bar{X}$	2-10m		10-20m		> 20m		
1. Broadlf. dec.									
2. Needlelf dec.									
3. Needlelf evg.									
Shrubs (+juv. trees)			0-0.3m		0.3-2m		> 2m		
4. Broadleaf deciduous									
5. Broadleaf evergreen									
6. Needleleaf deciduous									
7. Needleleaf evergreen									
Herbs			0-10cm		10-30cm		> 30cm		
8. Compoundleaf forbs									
9. Simpleleaf forbs									
10. Evergreen forbs									
11. Graminoids									
12. Pteridophytes									

Bryoids		Species	dbh	Ht (m)	Rings
13. Upland bryophytes					
14. Peat mosses					
15. Brownmosses					
16. Terricolous lichens					
17. Saxicolous lichens					
Epiphytes: nil = (1) 2 3 4 5 = high					

NATURAL AREAS - PLANT CLASSIFICATION

OBSERVERS: C. Wallis, C. Wershler DATE: Aug. 12/82

SOCIATION NAME: Carex aquatilis - Equisetum fluviatile

LOCATION: Saskatoon Mounatin Site 18

Slope 0	Aspect -	Topo. pos. depression	Microrelief -

Soil Order Great Group

Drainage Class	Moisture Regime	Ground Cover	Stability Index
1. V. rapid	1. xeric	bare rock %	1. unstable
2. rapid	2. xero-mesic	min. soil %	2. rapid change
3. well	3. mesic	humus %	3. moderate chg.
4. fresh	4. hydro-mesic	wood %	4. slow chg. X
5. impeded	5. hygric	water 20 %	5. stable
6. poor	6. hygro-hydric	gym. detr. %	6. climax
7. stagnant X	7. hydric X	ang. detr. 5 %	bryoid 0 %

GROWTH-FORMS	dbh (cm)		Ht ($\bar{X}$)	CC	Ht ($\bar{X}$)	CC	Ht ($\bar{X}$)	CC	Tot CC
Trees	max	$\bar{X}$	2-10m		10-20m		> 20m		
1. Broadlf. dec.									
2. Needlelf dec.									
3. Needlelf evg.									
Shrubs (+juv. trees)			0-0.3m		0.3-2m		> 2m		
4. Broadleaf deciduous									
5. Broadleaf evergreen									
6. Needleleaf deciduous									
7. Needleleaf evergreen									
Herbs			0-10cm		10-30cm		> 30cm		
8. Compoundleaf forbs									
9. Simpleleaf forbs									
10. Evergreen forbs									
11. Graminoids									
12. Pteridophytes									

Bryoids		Species	dbh	Ht (m)	Rings
13. Upland bryophytes					
14. Peat mosses					
15. Brownmosses					
16. Terricolous lichens					
17. Saxicolous lichens					

Epiphytes: nil = 1 2 3 4 5 = high

NATURAL AREAS - PLANT CLASSIFICATION

OBSERVERS: C. Wallis, C. Wershler DATE: August 12, 1982

SOCIATION NAME: Populus tremuloides - Epilobium angustifolium - Thalictrum occidentale

LOCATION: Saskatoon Mountain Site 20

Slope 3%	Aspect E	Topo. pos. slope	Microrelief relatively level
Soil Order		Great Group	

Drainage Class	Moisture Regime	Ground Cover	Stability Index
1. V. rapid	1. xeric	bare rock %	1. unstable
2. rapid	2. xero-mesic	min. soil %	2. rapid change
3. well X	3. mesic X	humus %	3. moderate chg.
4. fresh	4. hydro-mesic	wood 5 %	4. slow chg. X
5. impeded	5. hygric	water %	5. stable
6. poor	6. hygro-hydric	gym. detr. %	6. climax
7. stagnant	7. hydric	ang. detr. 5 %	bryoid Present %

GROWTH-FORMS	dbh (cm)		Ht ($\bar{X}$)	CC	Ht ($\bar{X}$)	CC	Ht ($\bar{X}$)	CC	Tot CC
Trees	max	$\bar{X}$	2-10m		10-20m		> 20m		
1. Broadlf. dec.									
2. Needlelf dec.									
3. Needlelf evg.									
Shrubs (+juv. trees)			0-0.3m		0.3-2m		> 2m		
4. Broadleaf deciduous									
5. Broadleaf evergreen									
6. Needleleaf deciduous									
7. Needleleaf evergreen									
Herbs			0-10cm		10-30cm		> 30cm		
8. Compoundleaf forbs									
9. Simpleleaf forbs									
10. Evergreen forbs									
11. Graminoids									
12. Pteridophytes									

Bryoids		Species	dbh	Ht (m)	Rings
13. Upland bryophytes					
14. Peat mosses					
15. Brownmosses					
16. Terricolous lichens					
17. Saxicolous lichens					
Epiphytes: nil = (X) 2 3 4 5 = high					

NATURAL AREAS - PLANT CLASSIFICATION

OBSERVERS: C. Wallis, C. Wershler DATE: August 12, 1982

SOCIATION NAME: Calamagrostis canadensis - Salix pedicellaris

LOCATION: Saskatoon Mountain Site 21

Slope 0	Aspect -	Topo. pos. depression	Microrelief none
Soil Order		Great Group	

Drainage Class	Moisture Regime	Ground Cover	Stability Index
1. V. rapid	1. xeric	bare rock %	1. unstable
2. rapid	2. xero-mesic	min. soil %	2. rapid change
3. well	3. mesic	humus %	3. moderate chg. X
4. fresh	4. hydro-mesic	wood %	4. slow chg.
5. impeded	5. hygric	water 15 %	5. stable
6. poor	6. hygro-hydric	gym. detr. %	6. climax
7. stagnant X	7. hydric XX	ang. detr. 5 %	bryoid present %

GROWTH-FORMS	dbh (cm)		Ht ($\bar{X}$)	CC	Ht ($\bar{X}$)	CC	Ht ($\bar{X}$)	CC	Tot CC
Trees	max	$\bar{X}$	2-10m		10-20m		> 20m		
1. Broadlf. dec.									
2. Needlelf dec.									
3. Needlelf evg.									
Shrubs (+juv. trees)			0-0.3m		0.3-2m		> 2m		
4. Broadleaf deciduous									
5. Broadleaf evergreen									
6. Needleleaf deciduous									
7. Needleleaf evergreen									
Herbs			0-10cm		10-30cm		> 30cm		
8. Compoundleaf forbs									
9. Simpleleaf forbs									
10. Evergreen forbs									
11. Graminoids									
12. Pteridophytes									

Bryoids		Species	dbh	Ht (m)	Rings
13. Upland bryophytes					
14. Peat mosses					
15. Brownmosses					
16. Terricolous lichens					
17. Saxicolous lichens					
Epiphytes: nil = (1) 2 3 4 5 = high					

NATURAL AREAS - PLANT CLASSIFICATION

OBSERVERS: C. Wallis, C. Wershler DATE: August 13, 1982

SOCIATION NAME: Picea glauca - Viburnum edule

LOCATION: Saskatoon Mountain - Site 22

Slope 1%	Aspect N	Topo. pos. slope	Microrelief relatively level
Soil Order		Great Group	

Drainage Class	Moisture Regime	Ground Cover	Stability Index
1. V. rapid	1. xeric	bare rock %	1. unstable
2. rapid	2. xero-mesic	min. soil %	2. rapid change
3. well	3. mesic	humus 10 %	3. moderate chg.
4. fresh X	4. hydro-mesic X	wood 5 %	4. slow chg.
5. impeded	5. hygric	water %	5. stable X
6. poor	6. hygro-hydric	gym. detr. 5 %	6. climax
7. stagnant	7. hydric	ang. detr. 5 %	bryoid present %

GROWTH-FORMS	dbh (cm)		Ht ($\bar{X}$)	CC	Ht ($\bar{X}$)	CC	Ht ($\bar{X}$)	CC	Tot CC
Trees	max	$\bar{X}$	2-10m		10-20m		> 20m		
1. Broadlf. dec.									
2. Needlelf dec.									
3. Needlelf evg.									
Shrubs (+ juv. trees)			0-0.3m		0.3-2m		> 2m		
4. Broadleaf deciduous									
5. Broadleaf evergreen									
6. Needleleaf deciduous									
7. Needleleaf evergreen									
Herbs			0-10cm		10-30cm		> 30cm		
8. Compoundleaf forbs									
9. Simpleleaf forbs									
10. Evergreen forbs									
11. Graminoids									
12. Pteridophytes									

Bryoids		Species	dbh	Ht (m)	Rings
13. Upland bryophytes					
14. Peat mosses					
15. Brownmosses					
16. Terricolous lichens					
17. Saxicolous lichens					
Epiphytes: nil = 1 (2) 3 4 5 = high					

NATURAL AREAS - PLANT CLASSIFICATION

OBSERVERS: C. Wallis, C. Wershler DATE: August 14, 1982

SOCIATION NAME: Betula papyrifera - Calamagrostis canadensis -Alnus crispa - Viburnum edule - Salix discolor - Epilobium angustifolium

LOCATION: Saskatoon Mountain - Site 23

Slope 1%	Aspect N	Topo. pos. plateau	Microrelief relatively level
Soil Order		Great Group	

Drainage Class	Moisture Regime	Ground Cover	Stability Index
1. V. rapid	1. xeric	bare rock %	1. unstable
2. rapid	2. xero-mesic	min. soil %	2. rapid change
3. well	3. mesic	humus %	3. moderate chg.
4. fresh	4. hydro-mesic	wood 5 %	4. slow chg. Xxx
5. impeded X	5. hygric X	water %	5. stable
6. poor	6. hygro-hydric	gym. detr. %	6. climax
7. stagnant	7. hydric	ang. detr. 5 %	bryoid present %

GROWTH-FORMS	dbh (cm) max	dbh (cm) $\bar{X}$	Ht ($\bar{X}$)	CC	Ht ($\bar{X}$)	CC	Ht ($\bar{X}$)	CC	Tot CC
Trees			2-10m		10-20m		> 20m		
1. Broadlf. dec.									
2. Needlelf dec.									
3. Needlelf evg.									
Shrubs (+juv. trees)			0-0.3m		0.3-2m		> 2m		
4. Broadleaf deciduous									
5. Broadleaf evergreen									
6. Needleleaf deciduous									
7. Needleleaf evergreen									
Herbs			0-10cm		10-30cm		> 30cm		
8. Compoundleaf forbs									
9. Simpleleaf forbs									
10. Evergreen forbs									
11. Graminoids									
12. Pteridophytes									

Bryoids		Species	dbh	Ht (m)	Rings
13. Upland bryophytes					
14. Peat mosses					
15. Brownmosses					
16. Terricolous lichens					
17. Saxicolous lichens					

Epiphytes: nil = (1) 2 3 4 5 = high

NATURAL AREAS - PLANT CLASSIFICATION

OBSERVERS: C. Wallis, C. Wershler DATE: Aug. 14/82

SOCIATION NAME: Carex aquatilis

LOCATION: Saskatoon Mountain Site 28

Slope 0	Aspect -	Topo. pos. depression	Microrelief none
Soil Order		Great Group	

Drainage Class	Moisture Regime	Ground Cover	Stability Index
1. V. rapid	1. xeric	bare rock %	1. unstable
2. rapid	2. xero-mesic	min. soil %	2. rapid change
3. well	3. mesic	humus %	3. moderate chg.
4. fresh	4. hydro-mesic	wood %	4. slow chg. X
5. impeded	5. hygric	water 20 %	5. stable
6. poor	6. hygro-hydric	gym. detr. %	6. climax
7. stagnant X	7. hydric X	ang. detr. 5 %	bryoid 0 %

GROWTH-FORMS	dbh (cm)		Ht ($\bar{X}$)	CC	Ht ($\bar{X}$)	CC	Ht ($\bar{X}$)	CC	Tot CC
Trees	max	$\bar{X}$	2-10m		10-20m		> 20m		
1. Broadlf. dec.									
2. Needlelf dec.									
3. Needlelf evg.									
Shrubs (+ juv. trees)			0-0.3m		0.3-2m		> 2m		
4. Broadleaf deciduous									
5. Broadleaf evergreen									
6. Needleleaf deciduous									
7. Needleleaf evergreen									
Herbs			0-10cm		10-30cm		> 30cm		
8. Compoundleaf forbs									
9. Simpleleaf forbs									
10. Evergreen forbs									
11. Graminoids									
12. Pteridophytes									

Bryoids		Species	dbh	Ht (m)	Rings
13. Upland bryophytes					
14. Peat mosses					
15. Brownmosses					
16. Terricolous lichens					
17. Saxicolous lichens					

Epiphytes: nil = (1) 2 3 4 5 = high

NATURAL AREAS - PLANT CLASSIFICATION

OBSERVERS: C. Wallis, C. Wershler DATE: Aug. 14, 1982

SOCIATION NAME: Picea glauca - Viburnum edule

LOCATION: Saskatoon Mountain Site 33

Slope 2%	Aspect N	Topo. pos. slope	Microrelief slightly hummocky
Soil Order		Great Group	

Drainage Class	Moisture Regime	Ground Cover	Stability Index
1. V. rapid	1. xeric	bare rock %	1. unstable
2. rapid	2. xero-mesic	min. soil %	2. rapid change
3. well	3. mesic	humus 10 %	3. moderate chg.
4. fresh X	4. hydro-mesic X	wood 5 %	4. slow chg.
5. impeded	5. hygric	water %	5. stable X
6. poor	6. hygro-hydric	gym. detr. 5 %	6. climax
7. stagnant	7. hydric	ang. detr. 5 %	bryoid 20 %

GROWTH-FORMS	dbh (cm)		Ht ($\bar{X}$)	CC	Ht ($\bar{X}$)	CC	Ht ($\bar{X}$)	CC	Tot CC
Trees	max	$\bar{X}$	2-10m		10-20m		> 20m		
1. Broadlf. dec.									
2. Needlelf dec.									
3. Needlelf evg.									
Shrubs (+ juv. trees)			0-0.3m		0.3-2m		> 2m		
4. Broadleaf deciduous									
5. Broadleaf evergreen									
6. Needleleaf deciduous									
7. Needleleaf evergreen									
Herbs			0-10cm		10-30cm		> 30cm		
8. Compoundleaf forbs									
9. Simpleleaf forbs									
10. Evergreen forbs									
11. Graminoids									
12. Pteridophytes									

Bryoids		Species	dbh	Ht (m)	Rings
13. Upland bryophytes					
14. Peat mosses					
15. Brownmosses					
16. Terricolous lichens					
17. Saxicolous lichens					
Epiphytes: nil = 1 2 3 4 5 = high					

Site 2 - dense Rubus parviflorus and Smilacina racemosa
Thalictrum occidentale, Delphinium glaucum
clumps of Corallorhiza maculata, Osmorhiza chilensis
reasonable Moose use

Site 3 - woodland pond with Glyceria pulchella, Rumex maritimus, Alopecurus aequalis, Sium suave, Poa palustris, Stellaria calycantha, Veronica scutellata, Ranunculus macounii, Mentha arvensis
Moose use

Site 4 - nice stands of Gymnocarpium dryopteris in adjacent poplar
Circaea alpina, Carex disperma, Glyceria pulchella, Athyrium filix-femina, Angelica genuflexa, Sorbus scopulina, Smilacina trifolia

Site 6 - Habenaria hyperborea, Aster puniceus, Angelica genuflexa

Site 8 - good patches of Rubus parviflorus

Site 9 - good patches of Rubus parviflorus

Site 10 - Cirsium foliosum, considerable cattle use

Site 11 - Senecio eremophilus, Dryopteris austriaca, Matteucia struthiopteris, Carex tenera

Site 12 - considerable amount of Spiraea betulifolia

Site 13 - Glyceria striata, Rubus parviflorus, Cinna latifolia, Streptopus amplexifolius, Sorbus scopulina, Viola selkirkii

Site 15 - large aspen, considerable growth of Spiraea betulifolia

Site 16 - large spruce and aspen

Site 19 - good patches of Rubus parviflorus

Site 24 - Salix discolor - Sorbus scopulina - Alnus tenuifolia with Cinna latifolia

Site 25 - Streptopus amplexifolius, Sorbus scopulina, Angelica genuflexa

Site 26 - lone Pinus contorta tree

Site 27 - Castilleja miniata, Habenaria viridis, Bromus canadensis, Phleum alpinum with Aster conspicuus in an area which generally has considerable amounts of Sorbus scopulina also Spiraea betulifolia

Site 29 - 20 metre, 50 cm dbh Pinus contorta in younger mixed aspen poplar and spruce

Site 30 - Arnica cordifolia, Ranunculus macounii, Viola renifolia mostly paper birch

Site 31 - Alnus crispa, Sorbus scopulina, Pinus contorta (lone tree)

Site 32 - Impatiens capensis, Angelica genuflexa

Site 34 - good patches of Rubus parviflorus at woodland edge, Angelica genuflexa in meadows

Site 35 - Alnus tenuifolia to 10 metres and 20 cm dbh with similarly large Salix discolor
Angelica genuflexa, Athyrium filix-femina, Cinna latifolia
Impatiens capensis

Site 36 - Streptopus amplexifolius

Site 37 - Sorbus scopulina

Site 38 - Arnica cordifolia (best patches) in aspen woods

Site 39 - Angelica genuflexa

Site 40 - Rubus parviflorus, otherwise not too much else of interest aspen on slope is mostly Populus tremuloides - Aster conspicuus - Epilobium angustifolium type
Spiraea betulifolia near top of slope

Site 41 - Luzula parviflora, Castilleja miniata

Site 42 - Streptopus amplexifolius

Site 43 - Impatiens capensis, Angelica genuflexa, Ranunculus abortivus much of poplar is Populus balsamifera - Viburnum edule
Rubus parviflorus appearing at edges

9.5 Terms of Reference

Schedule A

THE WORK REFERRED TO IN CLAUSE 1 OF AN AGREEMENT BETWEEN THE GOVERNMENT OF THE PROVINCE OF ALBERTA AND COTTONWOOD CONSULTANTS LTD., TO WHICH AGREEMENT THIS SCHEDULE IS ATTACHED AND OF WHICH IT FORMS A PART.

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1. INTRODUCTION

Saskatoon Mountain was put under reservation for natural area purposes in March of 1979. The current recommendation for the site is for it to be established mainly as a Recreational Natural Area with parts of it as an Educational Natural Area. File information indicates the possible presence of relict Cordilleran flora.

However, little work has been done on the location of special and/or sensitive features that deserve appropriate attention.

Parts of the area have been disturbed and there is increasing and conflicting land-use demands for the area. Sound management decisions of the future role of the site, its biophysical resources and the role of various land demands requires the collection of additional baseline data.

The following project description will contribute towards filling in some of the information gaps on special features of the site.

2. PURPOSES

General:

To collect baseline data on the special features of the Saskatoon Mountain Natural Area and to make recommendations concerning their management.

Specific: The contractor is to:

1. Provide an annotated significant vascular floral and bird species list.
2. Provide a labelled and unmounted collection of the significant vascular flora.

3. Identify known and potential locations of significant vascular flora, bird habitats and vegetation communities.

4. Provide preliminary information on other special features of the site as acquired in the course of fulfillment of other contract objectives.

5. Assess potential effects of present and proposed disturbances (such as hunting, cattle grazing, oil and gas surface access, etc.) in relation to the significant features identified in the course of the contract.

3. LOGISTIC SUPPORT

The consultant will provide all material and equipment required for completion of the study except:

1. Maps
2. Aerial Photographs
3. Film
4. Mylar
5. Typing Service(if required)
6. Drafting Service (if required)
7. Report duplication service (if required)

4. COMPLETION SCHEDULE

The final report will be due by September 30, 1982.

5. SITE DESCRIPTION

The Saskatoon Mountain Natural Area is located in NE 9, N 10, SE 10, 11, S 14, W 15, SE 15, SE 16 - 72-9-W6 and totals 907 ha (3.5 $mi.^2$).

Access is provided into the site. A road maintained by the County of Grande Prairie runs NS between sections 10 & 11 and 14 & 15 - 72-9-W6. There is a paved road maintained by the Department of National Defense extending NW through section 10

... 3 ...

and onto the Canadian Forces Station in section 10 & 15. There are numerous powerline easements and cutlines across the area.

Saskatoon Mountain rises about 70 m above the surrounding countryside and is heavily treed. The south and west slopes are very steep. The hilltop itself is fairly level. There are a few sloughs with both sedge wetlands and drier areas of willow, alder and birch. The south and west slopes are covered with aspen and balsam poplar. Across the more shallow slopes of the hill are scattered areas of mature white spruce.

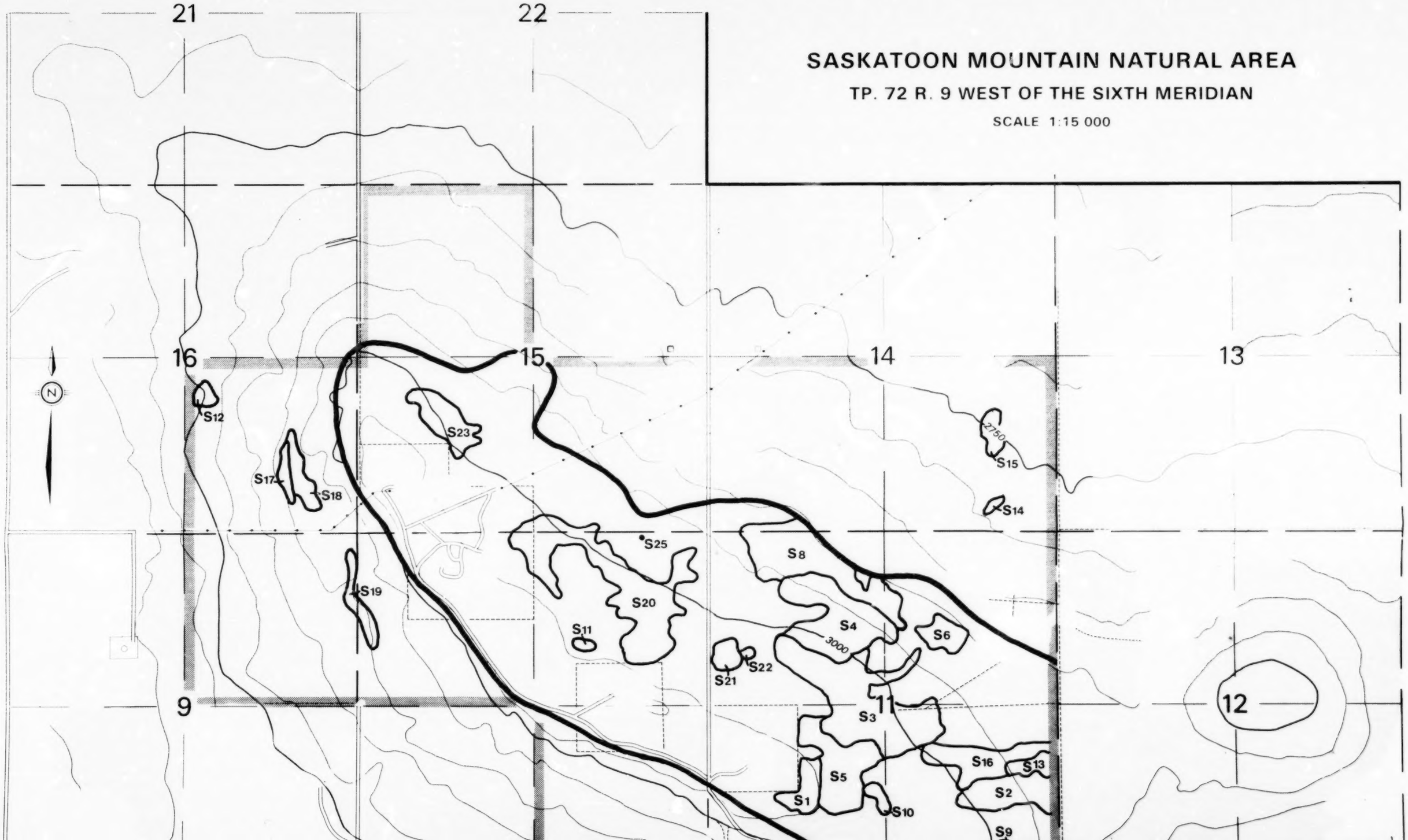
6. PROJECT REQUIREMENTS

A maximum of two Calgary/Edmonton to Saskatoon Mountain and return trips are anticipated for project completion. The timing of these trips is at the discretion of the consultant but must consider phenologies of plant species and the timing of avies nesting.

SASKATOON MOUNTAIN NATURAL AREA

TP. 72 R. 9 WEST OF THE SIXTH MERIDIAN

SCALE 1:15 000



16 15 14 13

9 11 12

3 2 1

S12 S23 S17 S18 S19 S25 S20 S11 S21 S22 S8 S4 S6 S3 S5 S1 S10 S16 S13 S2 S9 S7 S15 S14

2750

3000

N

LEGEND

MAIN LIMIT – CORDILLERAN SPECIES

SASKATOON MOUNTAIN NATURAL AREA BOUNDARY

WOODED LAND

CONTOUR INTERVALS 50 FEET

S23 SPECIAL AREAS

Prepared by Cartographic Services R E A P Division

Energy and Natural Resources